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# SITE CONCEPTUAL MODEL UPDATE FOURTH QUARTER 2004

ARCO STATION NO. 5110
5731 EAST FIRESTONE BOULEVARD
SOUTH GATE, CALIFORNIA
LARWQCB FILE NO. I-12074
PRIORITY B2
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Prepared for:
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January 15, 2005

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### SITE CONCEPTUAL MODEL UPDATE ARCO STATION NO. 5110 5731 EAST FIRESTONE BOULEVARD SOUTH GATE, CALIFORNIA

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#### 1.0 INTRODUCTION

SECOR International Incorporated (SECOR), on behalf of the Atlantic Richfield Company (Atlantic Richfield), presents this *Site Conceptual Model Update (SCMU)* for ARCO Station No. 5110 (Site) located at 5731 Firestone Boulevard, in South Gate, California (Figures 1 and 2). This report was prepared in response to the Los Angeles Regional Water Quality Control Board (LARWQCB) letters dated February 28, 2003 and August 27, 2003, titled *Implementation of Final Draft Guidelines for the Investigation and Cleanup of MTBE and Other Oxygenates* (Appendix A). The LARWQCB assigned the Site an investigation and cleanup priority of B2.

The previous SCMU has been updated to include the following phases of work completed during the Fourth Quarter 2004:

- Fourth Quarter 2004 groundwater monitoring and sampling results; and
- Fourth Quarter 2004 remedial system operation and maintenance.

SECOR has prepared this report to present a detailed written and graphical description of the Site characteristics and known distribution of petroleum hydrocarbon constituents in soil and groundwater beneath the Site. The SCMU is based on currently available information.

#### 2.0 SITE INFORMATION

#### 2.1 SITE LOCATION AND DESCRIPTION

ARCO Station No. 5110 is an operating retail gasoline station and mini-mart located at the northwest corner of Firestone Boulevard and Garfield Avenue in South Gate, California. The Site is located at an elevation of approximately 107 feet above mean sea level (msl). Local topography slopes to the south-southwest at approximately 0.017 feet per foot (USGS, 1964). The Los Angeles River is located approximately 2,000 feet west of the Site. The Site currently maintains one 20,000-gallon, and one split 24,000-gallon (two 12,000-gallon chambers), Xerxes double-walled fiberglass underground storage tanks (USTs), and four fuel dispenser islands containing a total of eight fuel dispensers. All product piping consists of double-contained fiberglass product lines. All dispensers are equipped with under-dispenser containment sumps. A drive-through carwash facility and associated clarifier are located at the northwestern perimeter of the Site.

The ARCO Vinvale Terminal is located approximately 500 feet north of ARCO Station No. 5110 (Figure 2). The Vinvale Terminal covers an area of approximately 35 acres and currently is used for the storage and on-loading of gasoline and diesel fuel products for Atlantic Richfield retail outlets in the Los Angeles metropolitan area.

#### 2.2 RECORD FEE TITLE HOLDER INFORMATION

Based on historical groundwater analytical data, the following adjacent properties may potentially be impacted by releases originating from ARCO Station No. 5110 (Property Grant Deed's were provided in the Second Quarter 2003 SCMU).

ARCO Station #5110

Property Address: 5731 East Firestone Boulevard, South Gate, California

Assessor's Parcel Number: 6232-002-004

Owner: Atlantic Richfield Company

Mailing Address: 4 Centerpointe Drive, La Palma, California 90623

Source: Atlantic Richfield files

McDonald's Restaurant

Property Address: 5700 Firestone Boulevard, South Gate, California, located south of the

Site, across Firestone Boulevard.
Assessor's Parcel Number: 6232-009-003
Owner: Nevada Investment Holdings, Inc.

Mailing Address: 220 Congress Park Drive, Suite 230, Delray Beach, Florida 33445 Source: Los Angeles County Recorder & Los Angeles County Assessor's Office

Gonzales Chrysler-Plymouth Car Dealership

Property Address: 5820 Firestone Boulevard, South Gate, California, located southeast of the Site, across Firestone Boulevard

Assessor's Parcel Number: 6232-007-021 and 6232-007-022 (formerly known as 6232-007-009 and 6232-007-010)

Owner: Silvestre Gonzales

Mailing Address: 9500 Rayo Avenue, South Gate, California 90280

Source: Los Angeles County Recorder & Los Angeles County Assessor's Office

Denny's Restaurant

Property Address: 5811 Firestone Boulevard, South Gate, California, located east of the

Site, across

Garfield Avenue

Assessor's Parcel Number: 6232-004-016 Owner: Prime Cut Grill South Gate Inc.

Mailing Address: 5811 Firestone Boulevard, South Gate, California Source: KnowX LLC (Real Estate Records Research Company)

#### 2.3 PREVIOUS SITE INVESTIGATIONS

This section presents a summary of historical assessment investigation activities that have been completed at the Site to date. Site maps showing historical soil boring/remedial well locations and historical UST, dispenser, and product line sample locations are included as Figures 3 through 5. A Site map showing hydrocarbon concentrations in soil is included as Figure 6. Historical soil analytical results are summarized in Table 1. Historical groundwater analytical and elevation data are summarized in Table 2. Well construction details are summarized in Table 3.

In September and October 1989, James M. Montgomery Consulting Engineers, Inc. (JMM) observed the removal of four steel USTs and completed an initial site investigation consisting of the installation of three soil borings (A-1 through A-3) and two groundwater monitoring wells (MW-19 and MW-20). The soil borings and monitoring wells were completed to depths ranging from 57 to 71 feet below ground surface (bgs). Soil samples collected below the USTs contained a maximum total petroleum hydrocarbon as gasoline (TPHg) concentration of 7,900 milligrams per kilogram (mg/kg, 3B-2'). Soil samples collected from the soil borings and monitoring wells contained a maximum concentration of 16,000 mg/kg TPHg (A-3-25'). Groundwater was encountered at approximately 57 feet bgs. Hydrocarbon impact was reportedly limited to the area in and around the former USTs (JMM, 1990). Historical figures showing the UST soil sample locations are included in Appendix B.

In June 1990, JMM installed one nested soil vapor extraction (SVE)/groundwater monitoring well (D-1) and two SVE wells (D-2 and D-3). Soil samples contained TPHg concentrations ranging from below laboratory detection limits to 8,600 mg/kg (JMM, 1990). Groundwater samples contained TPHg concentrations ranging from 400 (MW-19) to 1,600 (D-1) micrograms per liter ( $\mu$ g/L), and benzene concentrations ranging from 10.2  $\mu$ g/L (MW-20) to 800  $\mu$ g/L (D-1).

In March 1991, W.W. Irwin conducted a SVE test to evaluate SVE as a viable remedial alternative (W.W. Irwin, 1991). The radius of influence was determined to range from 76 to 100 feet. Vapor-phase TPHg concentrations ranged from 6,600 to 43,000 parts per million by volume (ppmv). Complete details and results of the SVE pilot test are presented in W.W. Irwin's *Report on Venting Test* dated March 27, 1991.

In December 1992, JMM completed four additional soil borings (D-4 through D-7) to a depth of approximately 50 feet bgs (JMM, 1993). TPHg was not detected above the laboratory detection limits (<10 mg/kg). Detectable benzene concentrations ranged from 0.005 mg/kg (D-6-10') to 0.33 mg/kg (D-4-50').

On April 5 and 6, 1994, Pacific Environmental Group, Inc. (PEG) installed one dual nested SVE well (VEW-1) and three triple-nested SVE wells (VEW-2 through VEW-4) to a depth of 60 feet bgs (PEG, 1995). Detectable TPHg concentrations ranged from 1.4 mg/kg (VEW-4-50') to 6,300 mg/kg (VEW-3-30'). Detectable benzene concentrations ranged from 0.006 mg/kg (VEW-1-30') to 60 mg/kg (VEW-2-25').

Prior to January 30, 1998, PEG installed two off-Site groundwater monitoring wells (MW-A1 and MW-A2) at the Site. MW-A1 was completed in the southbound lane of Garfield Avenue. MW-A2 was completed in the eastbound lane of Firestone Boulevard. A technical report detailing the installation of these wells was not available.

On December 1, 1999, SECOR completed two additional on-Site monitoring wells (MW-A3 and MW-A4). Wells MW-A3 and MW-A4 were completed at the southeast and northwest corners of the Site, respectively, and screened from approximately 35 to 65 feet bgs. A detectable level of TPHg was identified in one soil sample at a concentration of 1.8 mg/kg (MW-A3-40'). Detectable benzene concentrations ranged from 0.0028 mg/kg (MW-A3-55') to 0.21 mg/kg (MW-A3-40). Methyl-tertiary-butyl ether (MTBE) concentrations were identified in one soil sample at a concentration of 0.037 mg/kg (MW-A3-40'; SECOR, 2000).

On October 21 and 30, 2001, SECOR installed two additional off-Site monitoring wells MW-A5 and MW-A6, respectively. Monitoring well MW-A5 was installed in the eastbound lane of Firestone Boulevard, south of the Site. Monitoring well MW-A6 was installed in the sidewalk of the northbound lane of Garfield Avenue, east of the Site. Groundwater monitoring wells MW-A5 and MW-A6 were completed to a total depth of approximately 65 feet bgs. The well casings were constructed of four-inch diameter Schedule 40 PVC, and were screened (0.020-inch slot) from approximately 30 to 65 feet bgs (SECOR, 2001).

On January 24 and 25, 2002, SECOR over-drilled and abandoned four SVE wells (VEW-1, VEW-3, VEW-4, and D-2), and one groundwater monitoring well (D-1). The wells were abandoned to accommodate scheduled demolition/renovation activities including removal and replacement of the USTs and re-location of the station building (SECOR, 2002a).

From January through March, 2002, the Site was completely demolished and re-constructed. Demolition activities included removal of four 10,000-gallon, double-walled fiberglass USTs, all product dispensers, all associated subsurface product piping, dispenser island canopy, a clarifier associated with the former carwash, and demolition of the former station building. Renovation activities included installation of new USTs at the southern perimeter of the Site. new dispenser islands, new subsurface product and electrical piping, a new dispenser island canopy, new station building and carwash. A total of 27 soil samples were collected from beneath the USTs, clarifier, dispensers, and product lines and from the bottom of the new tankpit. Detectable concentrations of adsorbed-phase petroleum hydrocarbons were identified in 18 of the 27 submitted samples. The highest concentrations of adsorbed-phase hydrocarbons were detected in samples collected beneath the USTs (SECOR, 2002b). The maximum hydrocarbon concentrations were as follows: TPHg - 8,800 mg/kg (TK-4A-17); benzene - 16 mg/kg (TK-4A-17); MTBE - 8.1 mg/kg (TK-1B-17); and tertiary butanol (TBA) -24 mg/kg (TK-4B-17). A total of approximately 2,115 tons of hydrocarbon-impacted soil was generated during the UST removal activities and transported to TPS Technologies, in Adelanto, California for disposal/recycling.

On February 14, 2002, one 20,000-gallon, and one split 24,000-gallon (two 12,000-gallon chambers), Xerxes double-walled fiberglass USTs were installed in a new tankpit located at the southern end of the Site. New double-contained fiberglass product piping was installed from the USTs to four new dispenser islands, and under-dispenser containment sumps were installed below the new dispensers. A new clarifier was installed on-Site for use with the new on-Site car wash facility. Prior to installation of the new USTs, four baseline soil samples (NTK-1A-18', NTK-1B-18', NTK-2A-18', and NTK-2B-18') were collected from the bottom of the new tankpit excavation (SECOR, 2002b).

In March 2002, SECOR supervised the trenching and installation of approximately 400 feet of subsurface remedial conveyance piping at the Site. The remedial piping was installed to implement possible future SVE activities at the Site. Subsurface piping was constructed using one inch (AS), two inch (SVE), and six inch diameter PVC lines and was extended to existing vapor extraction wells D-3 and VEW-2, and to 18-inch diameter well boxes installed in strategic locations to accommodate possible future remedial well installation at the Site.

On April 16, 2002, SECOR advanced one soil boring within the former UST basin and converted it to a dual-nested groundwater monitoring/SVE well (MW-A7), to replace abandoned groundwater monitoring well D-1 (SECOR, 2002a). MW-A7 was constructed using two-inch (SVE) and four-inch (groundwater monitoring) diameter PVC casing screened (0.020-inch slot) from approximately

ten to 30 feet bgs and 35 to 60 feet bgs, respectively. A total of 12 soil samples were collected and analyzed. Detectable concentrations of petroleum hydrocarbon constituents were identified in all 12 samples. Maximum petroleum hydrocarbon concentrations were identified as follows: TPHg – 1,400 mg/kg (MW-A7-30); benzene – 1.5 mg/kg (MW-A7-25); MTBE – 7.7 mg/kg (MW-A7-20); and TBA – 16 mg/kg (MW-A7-20).

In a letter dated February 28, 2003, entitled *Implementation of Final Draft Guidelines for the Investigation and Cleanup of MTBE and Other Oxygenates,* the LARWQCB assigned the Site a cleanup priority of B2 (issued to all sites greater than 1,000 feet and less than 3,000 feet from a receptor, with or without MTBE/oxygenates detection: Appendix A).

SECOR submitted a Remedial Action Plan (RAP) dated June 25, 2003, in which SECOR proposed the installation of an air sparge (AS)/soil vapor extraction (SVE) system. In the RAP, SECOR proposed using existing SVE wells VEW-2 and D-3, monitoring well MW-A7, and installing five AS/SVE wells to implement the proposed AS/SVE remedial system.

In a letter dated August 27, 2003, the LARWQCB approved the installation of the five proposed AS/SVE wells and installation of the proposed remedial AS/SVE system (Appendix A).

From September 29 through October 4, 2003, SECOR installed five triple nested AS/SVE wells (AS/SVE-1 through AS/SVE-5). A total of 70 soil samples were collected and analyzed from soil borings AS/SVE-1 through AS/SVE-5. The maximum concentrations of adsorbed-phase hydrocarbons were identified as follows: TPHg – 6,700 mg/kg (AS/SVE-2-45), benzene – 12 mg/kg (AS/SVE-2-45), and MTBE – 11 mg/kg (AS/SVE-2-30). AS wells were completed using 1-inch diameter Schedule 80 PVC with a 2-foot stainless steel air sparge point set to depths ranging from approximately 60 to 68 feet bgs. The nested SVE wells were completed using Schedule 40 PVC with 0.020 slotted screen intervals extending from approximately 7 to 27 and 35 to 55 feet bgs.

Two soil samples were submitted from soil boring AS/SVE-2 (AS/SVE-2-58 and AS/SVE-2-65) for physical property data analysis to determine soil classification, particle size and distribution, and hydraulic conductivity (K). Sample AS/SVE-2-58 and AS/SVE-2-65 are silty sands representative of the aquifer material with vertical K values of 1.51 x 10<sup>-4</sup> and 4.42 x 10<sup>-5</sup> centimeters per second (cm/s), respectively. A value of 10<sup>-6</sup> is the approximate K value for clay and is considered the standard for a competent confining layer. Laboratory physical property data were included in SECOR's Fourth Quarter 2003 Site Conceptual Model Update Report, dated January 15, 2004.

Quarterly groundwater monitoring and sampling has been conducted at the Site since June 1993.

#### 3.0 MUNICIPAL WELL RECEPTOR SURVEY

SECOR researched the location of potential municipal/public supply wells using the following sources: 1) Geographic Environmental Information Management System (GEIMS) database via the Geotracker website (www.geotracker.swrcb.ca.gov); 2) Los Angeles Department of Water Resources (LADWR) Watermaster website (www.dpla.water.ca.gov/sd/groundwater/wells); 3) Los Angeles Department of Public Works (LADPW) website (www.ladpw.org); 4) Water Replenishment District of Southern California (WRD), 5) City of Southgate, 6) and Environmental Data Resources, Inc. (EDR) website (www.edrnet.com). A total of 18 wells were identified within a one-mile radius of the Site. A summary of the available well information is summarized in Table 4. A Site map showing wells identified within a one-mile radius is included as Figure 1.

 The closest identified wells that are known to be actively used for municipal supply are the City of South Gate Wells 02S/12W-31Q03 (SG-24) and 02S/12W-31Q02 (SG-25). These wells are located approximately 1,800 feet southwest of the Site in a clustered area east of the Los Angeles River and west of the Long Beach Freeway.

#### 4.0 GEOLOGY AND HYDROGEOLOGY

#### 4.1 REGIONAL GEOLOGY AND HYDROGEOLOGY

ARCO Station 5110 is located on the floodplain between the Los Angeles River and the Rio Hondo River. The Site is located within the Central Block physiographic province of the Los Angeles Basin (Yerkes, et al., 1965). The Central Block is a 55-mile long, wedge-shaped block oriented in a northwest-southeast direction in the middle portion of the Los Angeles Basin. It is bounded on the southwest by the northwest-trending Newport-Inglewood Uplift structural zone, on the northeast by the Whittier Fault and the Elysian-Repetto-Coyote Hills sequence, on the southeast by the Santa Ana Mountains and on the northwest by the Santa Monica Mountains (California Department of Water Resources, or CDWR, 1961).

The Site is underlain by approximately 20 feet of Holocene alluvial deposits consisting primarily of silt, clay, and discontinuous lenses of sand. These sediments represent river system deposits derived from the ancestral Los Angeles and Rio Hondo Rivers. The Upper Pleistocene Lakewood Formation extends from approximately 20 to 275 feet bgs. The upper part of the Lakewood Formation consists predominantly of fine-grained silt and clay. The lower portion of the Lakewood Formation contains greater percentages of sand with some gravel lenses. The Lower Pleistocene San Pedro Formation extends from a depth of approximately 275 to 1,200 feet bgs, and consists of marine and continental gravel, sand, sandy silt, silt and clay (PEG, 1998).

The Site is located within the Central Basin Pressure Area of the Central Groundwater basin of the Los Angeles Coastal Plain. The two main formations in this area, Lakewood and San Pedro, contain a series of distinct water-bearing zones that are separated by less-permeable zones or aquiclude. The Lakewood Formation is composed of four hydrostratigraphic zones: the Bellflower Aquiclude, the Exposition Aquifer, an unnamed aquiclude, and the Gage Aquifer. In the Site vicinity, the Bellflower Aquiclude extends from approximately 20 to 85 feet bgs. The underlying Exposition Aquifer can be divided into a middle hydrostratigraphic zone extending from

approximately 85 to 210 feet bgs, and a deep hydrostratigraphic zone extending from approximately 210 to 275 feet bgs.

Locally, the Bellflower Aquiclude contains a relatively high percentage of sand and functions as an unconfined to semi-confined aquifer instead of a confining layer. This is the case at ARCO Station 5110 where groundwater is encountered within the Bellflower Aquiclude at depths ranging from approximately 40 to 57 feet bgs.

#### 4.2 SITE GEOLOGY AND HYDROGEOLOGY

The subsurface lithology beneath the Site comprises five primary lithologic horizons: 1) interbedded sand, silty sand, silt, and thinly bedded clay from approximately near surface grade to 30 feet bgs; 2) sand from approximately 30 to 45 feet bgs; 3) thinly bedded clay, silt, and silty sand from approximately 45 to 55 feet bgs; 4) sand from approximately 55 to 65 feet bgs; and 5) silt and silty sand from approximately 65 to 70 feet bgs (maximum depth explored). A Site map with cross-sectional index lines is included as Figure 7. Generalized cross sections A-A' and B-B' depict the subsurface lithology and are included as Figures 8 and 9, respectively. Historical soil boring logs were provided in the Fourth Quarter 2003 SCMU.

Depth to groundwater in the on-Site wells has ranged from a low of 57.21 feet bgs in June 1990 (MW-19) to a high of 39.61 feet bgs in December 1999 (MW-19). Groundwater levels across the Site rose steadily from June 1990 through approximately the end of 1999 (approximately 13 feet), and then began dropping and have continued to drop (approximately 9 feet) through the Fourth Quarter 2004.

#### 5.0 HYDROCARBON-IMPACTED SOIL AND GROUNDWATER

#### 5.1 HYDROCARBON-IMPACTED SOIL

Based on analytical data collected from UST removal and replacement operations and numerous assessment activities, the highest concentrations of adsorbed-phase hydrocarbons were identified beneath the former USTs, and at the eastern end of the former central dispenser island. Soil samples collected beneath the USTs in February 2002, contained TPHg concentrations up to 8,800 mg/kg (TK-4A-17), benzene concentrations up to 16 mg/kg (TK-4A-17), and MTBE concentrations up to 8.1 mg/kg (TK-1B-17). Soil samples collected from borings installed within and peripheral to the former USTs indicated that elevated concentrations of TPHg and benzene, toluene, ethylbenzene, and total xylenes (BTEX) extend from approximately ten feet bgs to 60 feet bgs in the area of the former USTs. Analytical data from recent soil borings installed within the area of the former USTs (MW-A7, AS/SVE-1 and AS/SVE-2) indicated that elevated concentrations of MTBE (11 mg/kg; AS/SVE-2-30) and TBA (16 mg/kg; MW-A7-20) were identified within the upper 20 feet of the soil column, with lower concentrations of MTBE and TBA extending to approximately 65 feet Analytical data indicates that the former USTs are the primary source area for adsorbedphase hydrocarbon contamination at the Site. The lateral extent of the adsorbed-phase hydrocarbon plume in the vicinity of the former USTs appears to be defined to the west by VEW-1. to the north by D-6, to the east by D-4, and to the south by D-3. A site map showing hydrocarbon concentrations in soil is included as Figure 6. Historical soil analytical results are summarized in Table 1.

During Site demolition and renovation activities conducted in February 2002, soil samples collected beneath the eastern end of the central dispenser island indicated elevated concentrations of TPHg (3,500 mg/kg; D-6-2) and total xylenes (360 mg/kg; D-6-2). Additionally, soil excavated from the eastern end of the new tankpit at the southern end of the Site was stained dark gray and contained hydrocarbon odors. Soil samples collected from shoring soil boring SB-5, installed along the northeast perimeter of the new tankpit, contained TPHg concentrations up to 1,200 mg/kg (SB-5-5). Soil samples collected from the base of the new tankpit contained MTBE concentrations of up to 0.59 mg/kg (NTK-1B-18). Recent soil borings AS/SVE-4 and AS/SVE-3 identified elevated concentrations of TPHg (3,100 mg/kg; AS/SVE-4-15) and benzene (2.6 mg/kg; AS/SVE-4-30) within the upper 30 feet of the soil column. It appears that the former central dispenser island was an additional source area for adsorbed-phase hydrocarbon contamination. The lateral extent of the adsorbed-phase hydrocarbon plume in this area is predominantly defined to the east by MW-A3, and to the west by AS/SVE-5.

Low-level concentrations of adsorbed-phase hydrocarbons have been identified from 40 to 65 feet bgs, within the capillary fringe and saturated zones, in nearly all borings installed on-and off-Site. Fluctuating groundwater elevations (which have fluctuated as much as 17 feet in MW-19) have likely smeared and transported adsorbed-phase petroleum hydrocarbons across the Site within the capillary fringe.

#### 5.2 HYDROCARBON-IMPACTED GROUNDWATER

#### 5.2.1 Fourth Quarter 2004 Groundwater Sampling Event

On November 16, 2004, SECOR conducted the Fourth Quarter 2004 Groundwater Monitoring and Sampling event at the Site. A total of nine groundwater monitoring wells (MW-19, MW-20, and MW-A1 through MW-A7) were gauged and sampled. Depth to groundwater in the on- and off-Site groundwater monitoring wells ranged from 50.81 to 53.63 feet bgs. The groundwater flow direction was to the south-southeast at a gradient of approximately 0.004 feet per foot.

All groundwater samples were relinquished to Del Mar Analytical of Irvine, California (Del Mar) for chemical analysis. SECOR and Del Mar adhered to strict chain-of-custody procedures from sample collection to sample analysis. All groundwater samples were analyzed for the following analytes and in accordance with the appropriate Environmental Protection Agency (EPA) method:

- Gasoline range organics C<sub>4</sub>-C<sub>12</sub> (GRO) by EPA Method 8015B; and
- BTEX, di-isopropyl ether (DIPE), ethyl-tertiary-butyl ether (ETBE), tertiary-amyl-methyl ether (TAME), TBA, MTBE, and ethanol by EPA Method 8260B.

Maximum hydrocarbon concentrations were identified as follows: GRO - 24,000 µg/L, (MW-A4); benzene - 7,400 µg/L (MW-A4), MTBE - 570 µg/L (MW-A3), and TBA - 790 µg/L (MW-A5). Concentrations qualified by a "J flag" are estimated values detected at a level below the reporting limit (RL) and above the laboratory method detection limit (MDL). EPA-certified labs therefore advise that the user of this data should be aware that this data is of unknown quality.

Groundwater analytical and elevation data are summarized in Table 2. A groundwater elevation and hydrocarbon concentration map is included as Figure 10. Isoconcentration maps depicting the lateral extent of GRO, benzene, MTBE, and TBA in groundwater are included as Figures 11.

through 14, respectively. Hydrographs depicting GRO, benzene, MTBE and TBA concentrations observed in groundwater monitoring wells over time are included as Graphs 1 through 10.

Groundwater sampling field data sheets are provided in Appendix C. Laboratory analytical reports and chain-of-custody documentation are provided in Appendix D. Waste disposal documentation is provided in Appendix E.

#### 5.2.2 Dissolved-Phase Hydrocarbon Plume

The ARCO Vinvale Terminal is located approximately 500 feet north of ARCO Station No. 5110 (Figure 2). The Vinvale Terminal covers an area of approximately 35 acres and currently is used for the storage and on-loading of gasoline and diesel fuel products for ARCO retail outlets in the Los Angeles metropolitan area. The Vinvale Terminal maintains ten aboveground storage tanks (ASTs) for various grades of refined products and one slop oil AST. The total tank working capacity is approximately 34 million gallons. A multi-bay fuel loading rack is located in the southwestern portion of the Vinvale Terminal.

Based on the historical quarterly groundwater analytical results, it appears that dissolved-phase GRO and BTEX components are migrating southward from the ARCO Vinvale Terminal to ARCO Station No. 5110, resulting in commingling of the groundwater plume on the northern portion of the station property. This is evidenced by historically elevated concentrations of GRO and BTEX in monitoring wells MW-A4 and MW-19, which are located north and northeast (up-gradient) of the former and existing USTs and associated dispensers and product lines at the Site. The highest historical concentrations of GRO (52,000 µg/L on March 21, 2000) and benzene (9,300 µg/L on August 23, 2000) were identified in MW-19. Both MW-A4 and MW-19 have historically had non detectable to very low concentrations of fuel oxygenates, suggesting that the dissolved-phase plume at the northern portion of the Site represents a commingling of plumes with the Vinvale Terminal. Wells MW-A7, MW-A3, and MW-20 contain elevated concentrations of TPHg, BTEX, and fuel oxygenates, and appear to indicate contamination associated with operation of the former USTs and dispensers at the Site, which distributed the fuel additive MTBE.

MTBE was first analyzed for and detected at the Site in July 1996. The highest concentrations of MTBE have historically been detected in former monitoring well D-1 (abandoned January 24, 2002), located immediately north of the former USTs. The highest historical MTBE concentration of 11,000  $\mu$ g/L was detected in D-1 in December 1999. Currently the highest concentrations of MTBE are located in MW-A4. The maximum TBA concentration was reported in well MW-A7 on June 6, 2002, at a concentration of 1,200  $\mu$ g/L. Elevated concentrations of fuel oxygenates, primarily MTBE and TBA, have historically been limited to the on-Site wells. However, during the Fourth Quarter 2003, off-Site down-gradient well MW-A2 began indicating increasing concentrations of GRO and benzene, and MW-A5 is indicating increasing concentrations of GRO, benzene, MTBE, and TBA.

#### 6.0 REMEDIATION ACTIVITIES

#### 6.1 Enhanced Fluid Recovery

From July 1999 through January 2002, enhanced fluid recovery (EFR) was performed approximately monthly with a vacuum truck as an interim remedial action due to elevated concentrations of MTBE identified in D-1. EFR was also performed briefly at wells MW-20, MW-A5, and MW-A6. During the EFR activities, a total of approximately 17,391 gallons of hydrocarbonimpacted groundwater was removed from the Site. EFR activities were discontinued after D-1 was abandoned in January 2002. A summary of historical EFR events is presented in Table 5.

#### 6.2 Source Removal and Excavation

The source of the discharge has been removed and replaced. On February 7, 2002, four 10,000-gallon, double-walled fiberglass USTs and their associated subsurface product piping and dispensers were removed from the Site. On February 14, 2002, one 20,000-gallon, and one split 24,000-gallon (two 12,000-gallon chambers), Xerxes double-walled fiberglass USTs were installed at the southern end of the Site. New double-contained fiberglass product piping was installed from the USTs to four new dispenser islands, and under-dispenser containment sumps were installed below the new dispensers. A new clarifier was installed on-Site for use with the new carwash facility.

Extensive excavation and trenching was performed at the Site during installation of the new USTs (new tankpit located at the southern perimeter of the Site), dispensers, subsurface product and electrical piping, and new canopy footings. Additionally, the footprint of the new station building, dispenser islands, and carwash were excavated a minimum of two feet and recompacted with clean imported soil. During preparation of the former tankpit for backfilling, approximately 200 tons of soil and pea gravel was removed from the bottom of the tankpit. Soil excavated from the bottom of the former tankpit emitted volatile organic compounds (VOC) concentrations in excess of 1,000 ppmv as measured in the field with a hand held photo-ionization detector (PID).

A new tankpit was excavated at the southern end of the Site. Soil excavated at the northeastern corner of the new tankpit was visibly stained (grayish) and impacted with petroleum hydrocarbons, likely associated with the former dispensers. The new tankpit was excavated to a total depth of approximately 18 feet bgs. Soil encountered from 15 to 18 feet bgs was stained a greenish color, and emitted VOC concentrations above 50 ppmv. Due to the encountered hydrocarbon contamination, the majority of soil generated from the new tankpit excavation was hauled off Site for disposal. A total of approximately 1,500 tons of soil were excavated from the new tankpit, of which approximately 500 tons, primarily from the upper half of the western end of the tankpit, were re-used on-Site as backfill material for the former tankpit.

During the station renovation activities, a limited remedial over-excavation of hydrocarbon-impacted soil was performed at the eastern end of the former middle dispenser island. A five by five foot wide excavation was completed to a depth of five feet bgs to remove hydrocarbon-impacted soil identified in dispenser sample D-6-2'.

A total of approximately 2,115 tons of petroleum hydrocarbon-impacted soil was removed from the Site during the Site demolition and renovation activities and transported to TPS Technologies Soil Recycling (TPS) in Adelanto, California for disposal/recycling (SECOR, 2002).

#### 6.3 AS/SVE Remedial System Operation

#### 6.3.1 Remedial System Installation and Startup

During the First Quarter 2004, SECOR finalized installation of an AS/SVE remedial system at the Site. The system consists of a Paragon Systems ET-250 oxidizer (currently in thermal mode) connected to six dual-nested SVE wells (SVE-1 through SVE-5, and MW-A7). An Ingersoll-Rand rotary screw air compressor is connected to five AS wells (AS-1 through AS-5). SVE operational summary data is included in Tables 6 and 7.

The SVE system was started on April 7, 2004, and samples were collected from each individual well, and from the influent and effluent vapor stream to the thermal oxidizer. Undiluted vapor analytical results in the process stream at startup were identified as follows: gasoline range organics (GRO;  $C_4$ - $C_{12}$ ) – 8,400 ppmv, benzene – 92 ppmv, and MTBE - <27 ppmv. Vapor analytical results from the SVE system process stream and from individual wells are summarized in Tables 8 and 9, respectively.

After sampling, the system was shut down. Effluent vapor samples were analyzed on 24-hour turnaround to ensure the system was destroying vapors to within the South Coast Air Quality Management District (SCAQMD) required benzene limit of 0.24 ppmv. Benzene was detected in the effluent stream at 0.19 ppmv, just below the SCAQMD limit.

The SVE system was restarted on April 13, the dilution valve was opened 100%, effluent samples were collected, and the system was shut down. Analytical results were <0.059 ppmv for benzene.

On April 16, the SVE system was started and left to continually operate. Samples were collected weekly for the first month to ensure the oxidizer was capable of destroying hydrocarbon vapors to within the SCAQMD benzene requirement.

#### 6.3.2 Current Operational Status

From system start-up through September 23, 2004 vapors were extracted from the shallow zone intervals of AS/SVE-1, AS/SVE-2, AS/SVE-3, AS/SVE-4, AS-SVE-5, and MW-A7. All wells used for SVE are dual nested. On September 23, 2004, the shallow zone wells were closed and the deeper zone wells were opened due to decreasing hydrocarbon vapor concentrations to the thermal oxidizer. Air sparging has not been initiated due to the high influent concentrations to the thermal oxidizer. Monitoring and enhancement of the SVE system is performed on a weekly basis. Individual SVE well monitoring data collected in the field is summarized in Table 10. Air sparge well data is summarized in Table 11 (AS wells currently not on-line). Daily operational logs are included in Tables 12a, 12b, and 12c.

Vapor samples collected on December 16, 2004 (deep zone wells open) identified GRO, benzene and MTBE concentrations of 1,700 ppmv, 0.98 ppmv, and < 0.4 ppmv, respectively, in the undiluted process stream.

As of December 31, 2004, an estimated total of 37,369 pounds of GRO has been destroyed by vapor extraction (Figure 16). Laboratory analytical reports and chain-of-custody documentation are provided in Appendix D.

#### 7.0 PLUME TRAVEL TIME DETERMINATION

A conservative estimate of the plume travel time was made using BIOSCREEN, a Microsoft Excel spreadsheet analytical model based on the Domenico analytical solute transport model. The nearest receptor identified is Municipal Well No. 02S/12W-31Q02 (SG-25), located approximately 1,800 feet southwest of the Site. The plume travel time estimate was based on the time for MTBE concentrations of 13  $\mu$ g/L, the primary maximum contaminant level (MCL) of MTBE, to reach the Municipal Well. Based on the Bioscreen model, the most likely scenario was a plume travel time of more than 130.5 years. The Plume Travel Time Determination Report is included in Appendix E.

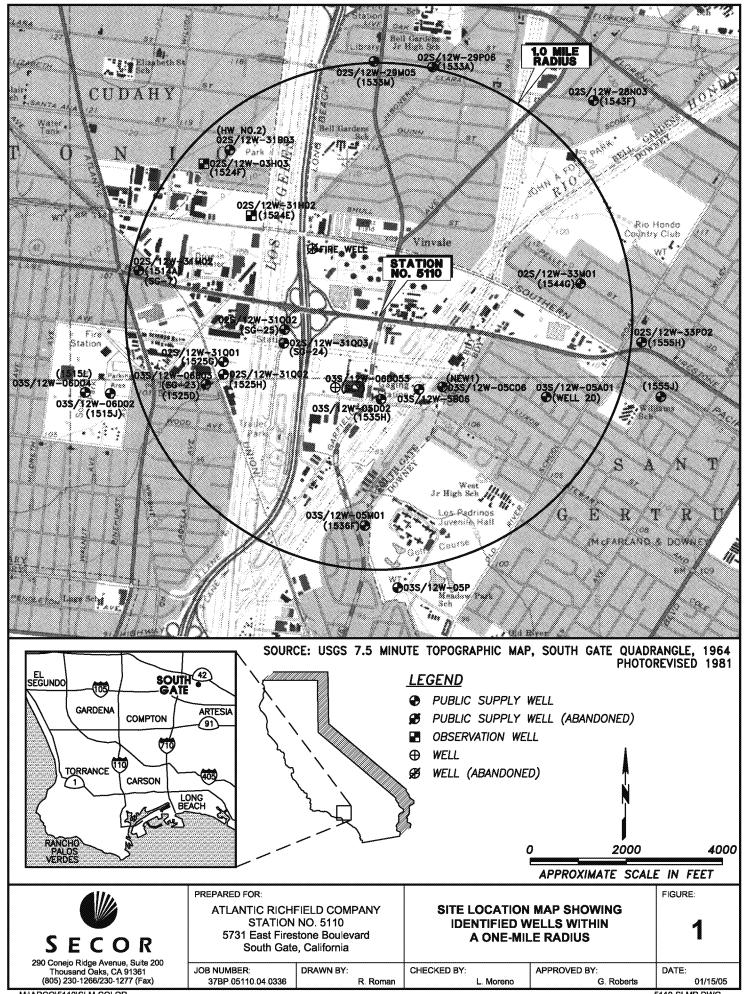
#### 8.0 STANDARD LIMITATIONS

All work was performed under the supervision of a Registered Geologist as defined in the Registered Geologist Act of the California Code of Regulations. The information contained in this report represents our professional opinions, and is based in part on information supplied by the client. These opinions are based on currently available information and are arrived at in accordance with currently accepted hydrogeologic and engineering practices at this time and location. Other than this, no warranty is implied or intended.

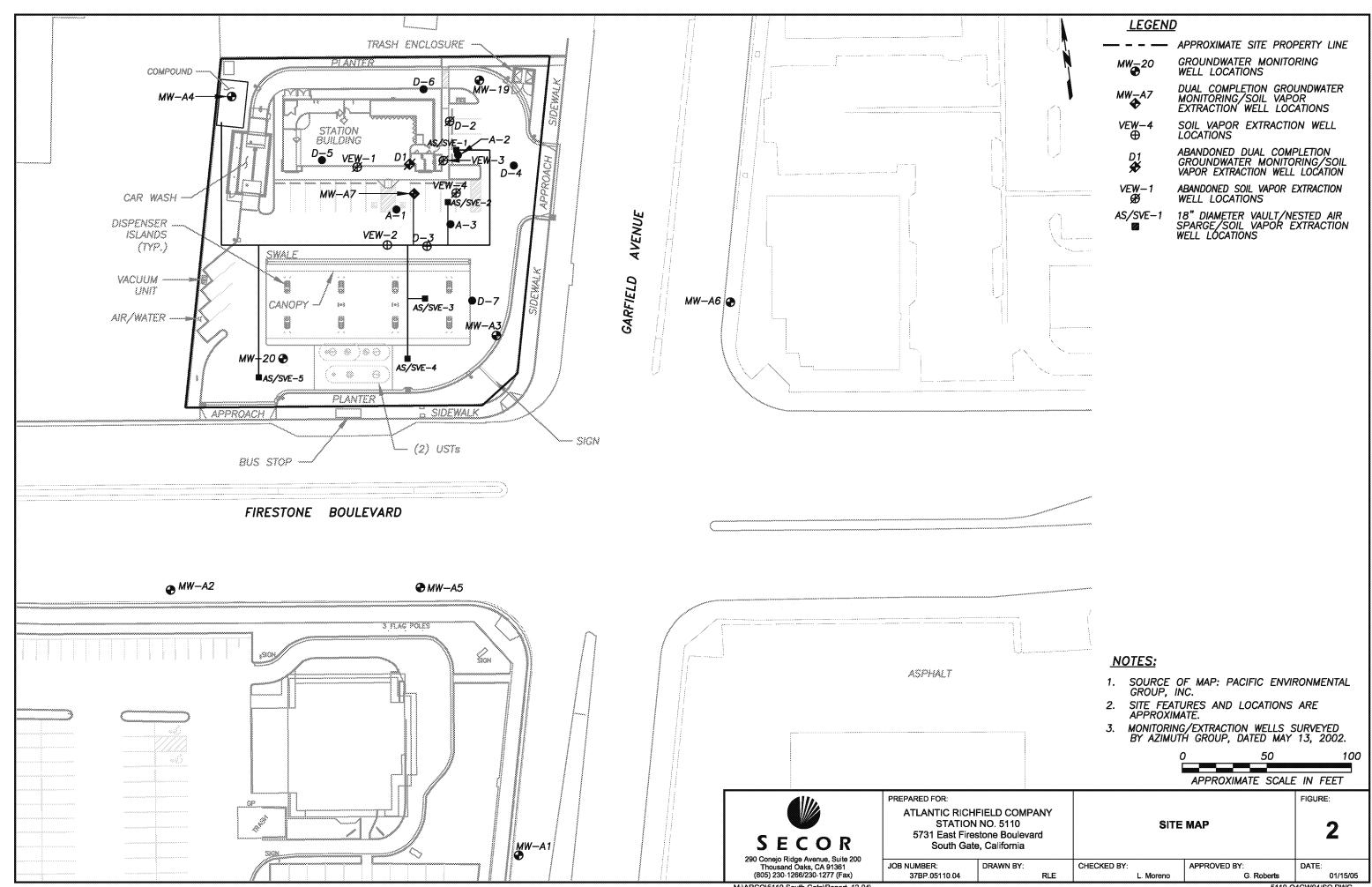
#### 9.0 REFERENCES

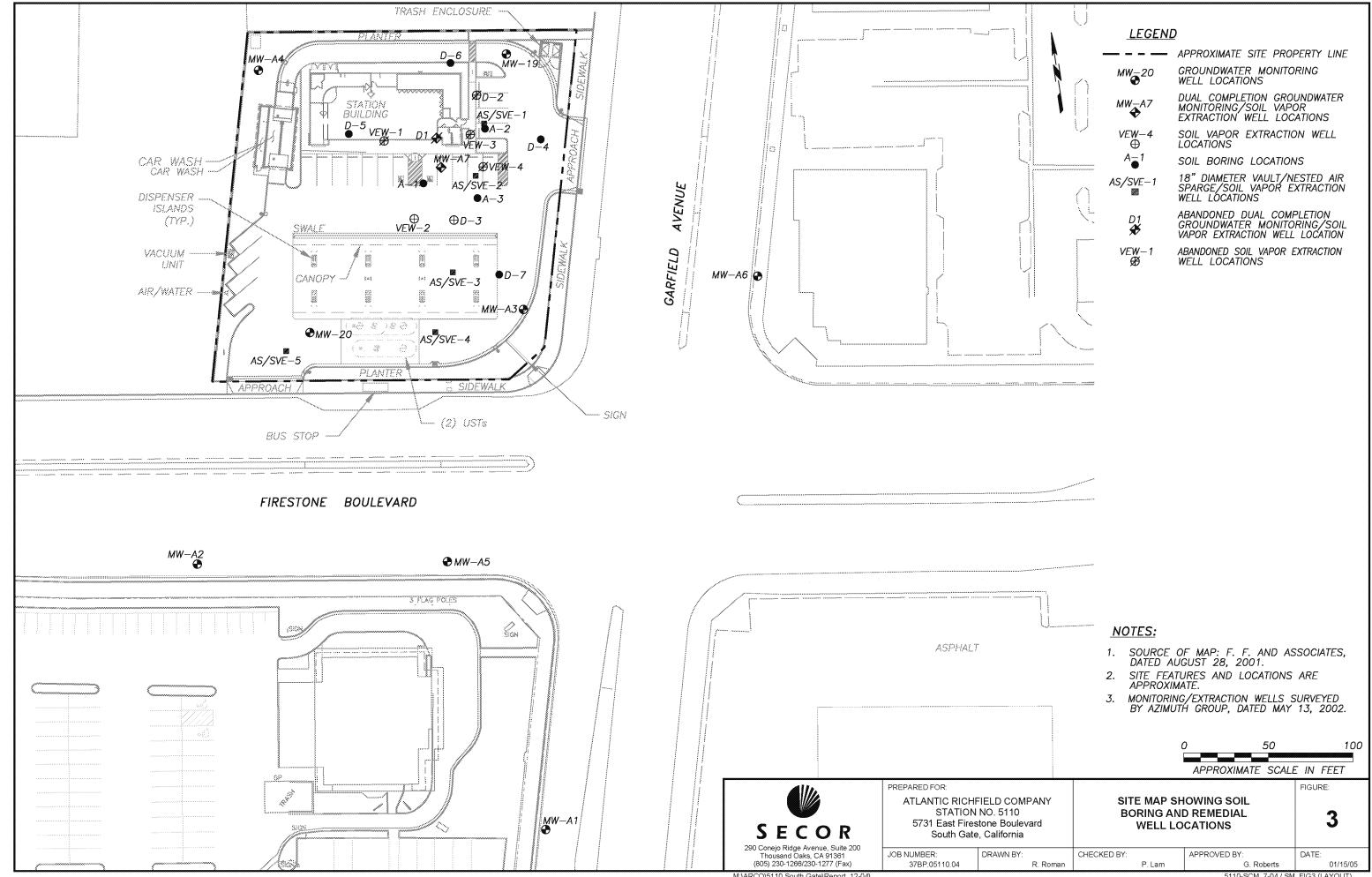
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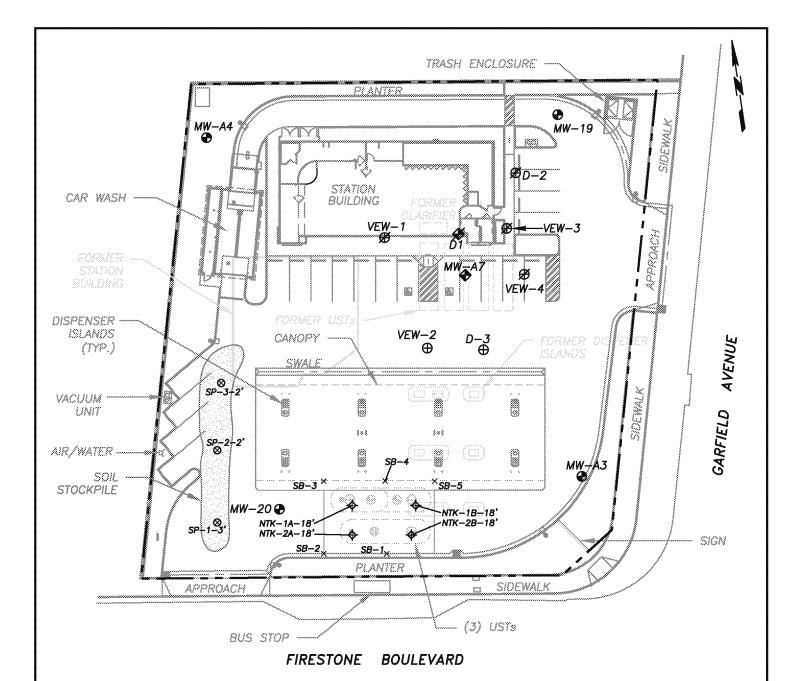
**FIGURES** 



M:\ARCO\5110\SLM-COLOR 5110-SLMR.DWG







# LEGEND

MW\_20 MW\_A7 VEW\_4 D\_1 VEW\_1 NTK\_1A\_18' SB\_1 APPROXIMATE SITE PROPERTY LINE

GROUNDWATER MONITORING WELL LOCATIONS

DUAL COMPLETION GROUNDWATER MONITORING/ SOIL VAPOR EXTRACTION WELL LOCATIONS

SOIL VAPOR EXTRACTION WELL LOCATIONS

ABANDONED DUAL COMPLETION GROUNDWATER MONITORING/ SOIL VAPOR EXTRACTION WELL LOCATION

ABANDONED SOIL VAPOR EXTRACTION WELL LOCATIONS

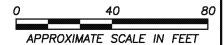
NEW UST ENCLOSURE SAMPLE LOCATIONS

SHORING SAMPLE LOCATIONS

SOIL STOCKPILE SAMPLE LOCATIONS

#### NOTES:

- 1. SOURCE OF BASE MAP: FRED FIEDLER AND ASSOCIATES, DATED AUGUST 28, 2001.
- 2. SITE FEATURES AND LOCATIONS ARE APPROXIMATE.
- 3. MONITORING/EXTRACTION WELLS SURVEYED BY AZIMUTH GROUP, DATED MAY 13, 2002.





290 Conejo Ridge Avenue, Suite 200 Thousand Oaks, CA 91361 (805) 230-1266/230-1277 (Fax) PREPARED FOR:

ATLANTIC RICHFIELD COMPANY
STATION NO. 5110
5731 East Firestone Boulevard
South Gate, California

South Gate, California

JOB NUMBER: DRAWN BY:

SITE MAP SHOWING NEW
UST, SHORING BORING, AND SOIL
STOCKPILE LOCATIONS

FIGURE:

DATE:

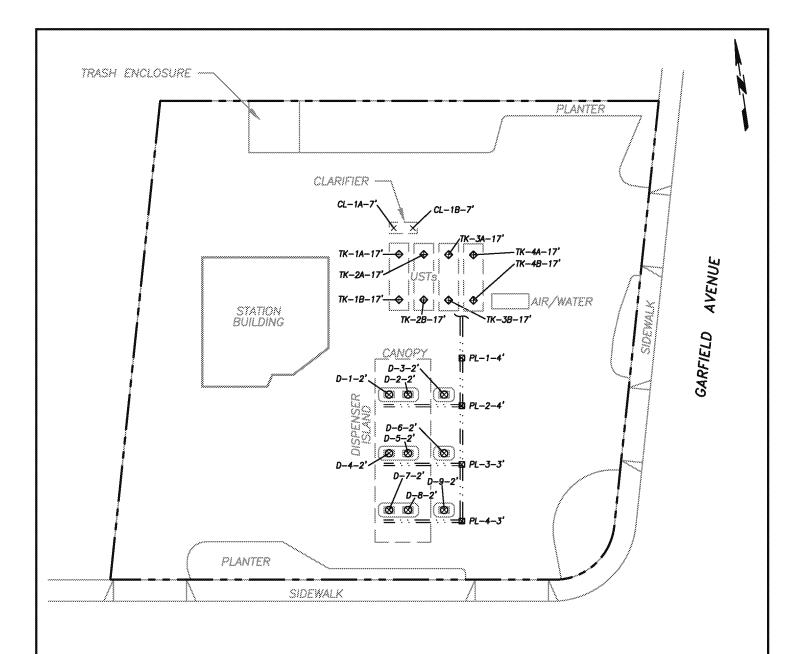
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37BP.05110.04

R. Roman

CHECKED BY: APPROVED BY: P. Lam

G. Roberts 01/15/05 5110-SMPL.DWG / SMPL\_FiG4 (LAYOUT)



#### FIRESTONE BOULEVARD

#### LEGEND

CL-1A-7

APPROXIMATE SITE PROPERTY LINE

PREPARED FOR:

JOB NUMBER:

37BP.05110.04

---- PRODUCT PIPING LOCATIONS

 $\stackrel{D-1-2'}{\otimes}$  DISPENSER SAMPLE LOCATIONS  $\stackrel{PL-1-4'}{\otimes}$  PRODUCT LINE SAMPLE LOCATIONS

TK-1A-17' USTs SAMPLE LOCATIONS

CLARIFIER SAMPLE LOCATIONS

#### **NOTES:**

CHECKED BY:

 NOT A SURVEYED MAP, SITE FEATURES AND LOCATIONS ARE APPROXIMATE.





ATLANTIC RICHFIELD COMPANY STATION NO. 5110 5731 East Firestone Boulevard South Gate, California

DRAWN BY:

R. Roman

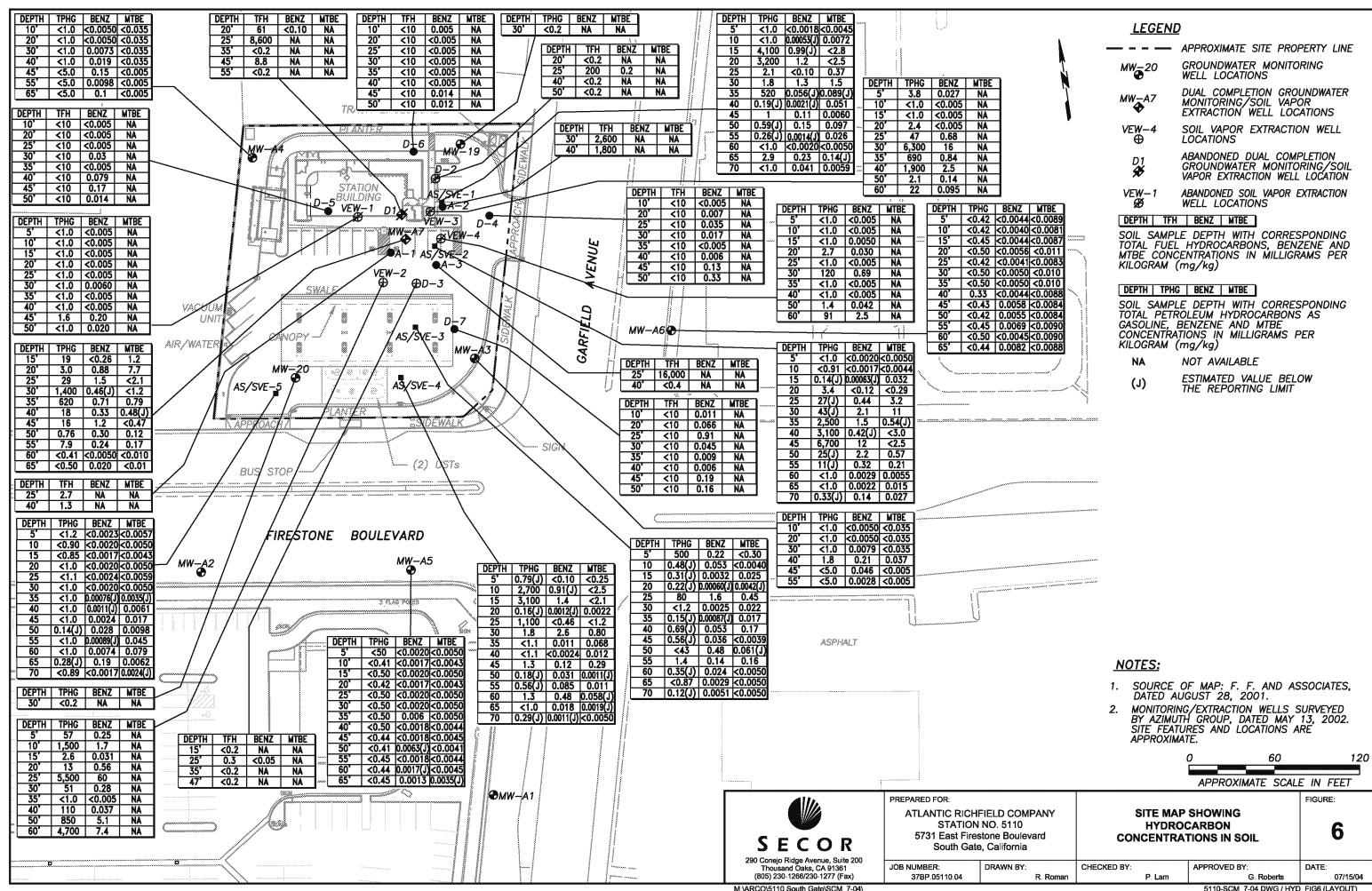
SITE MAP SHOWING FORMER UST, PRODUCT PIPING, AND DISPENSER SAMPLE LOCATIONS

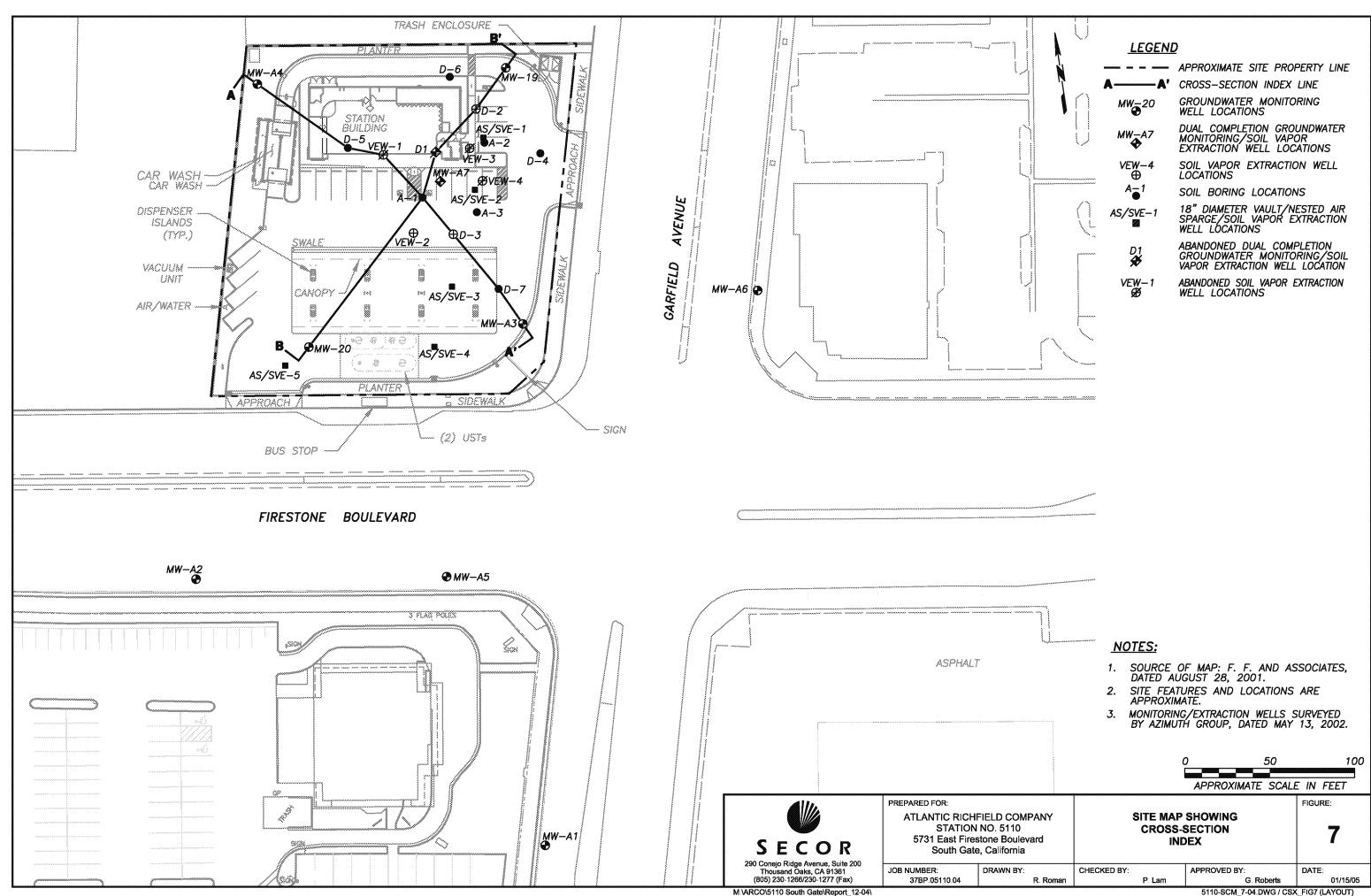
P. Lam

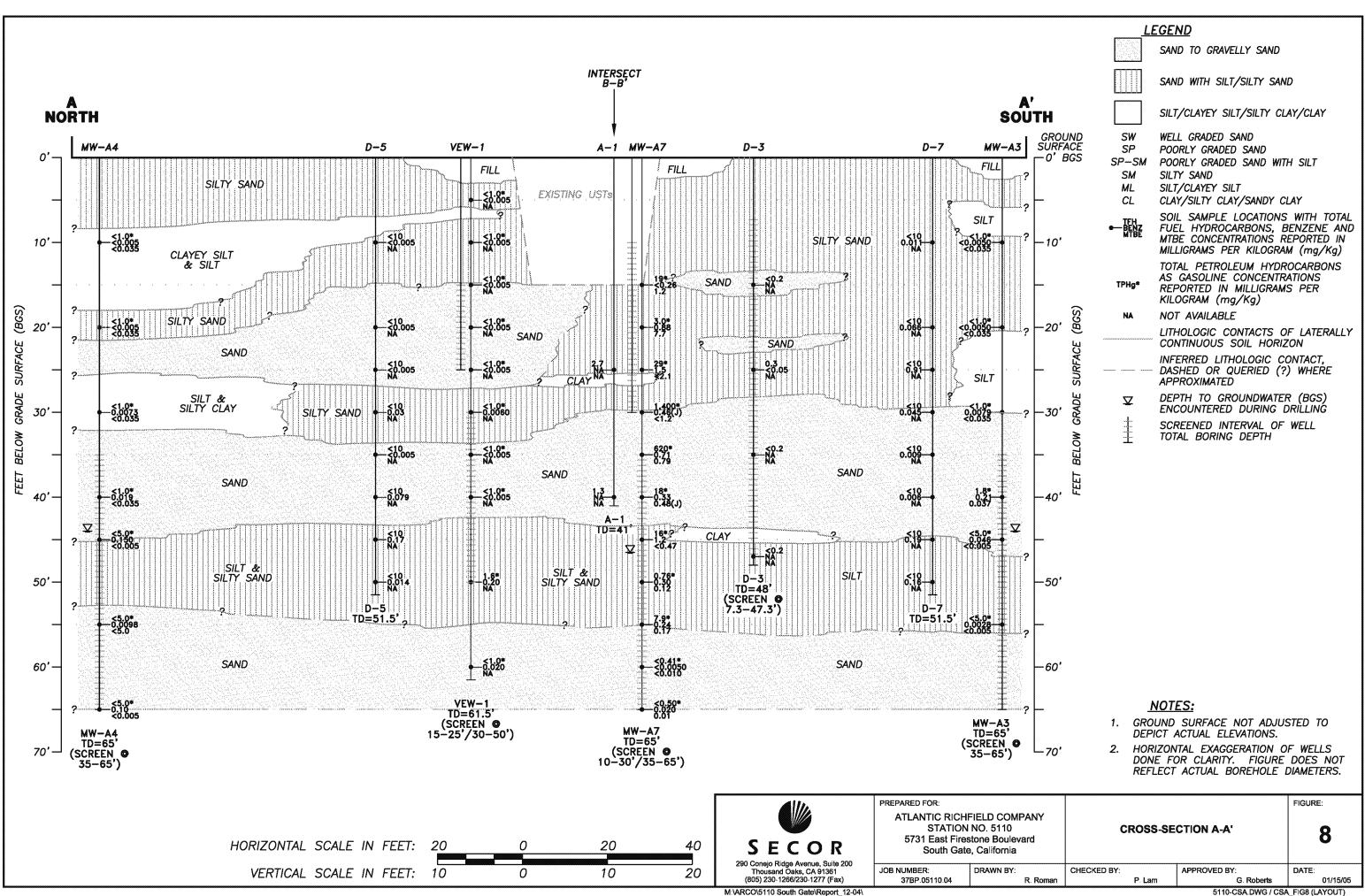
FIGURE:

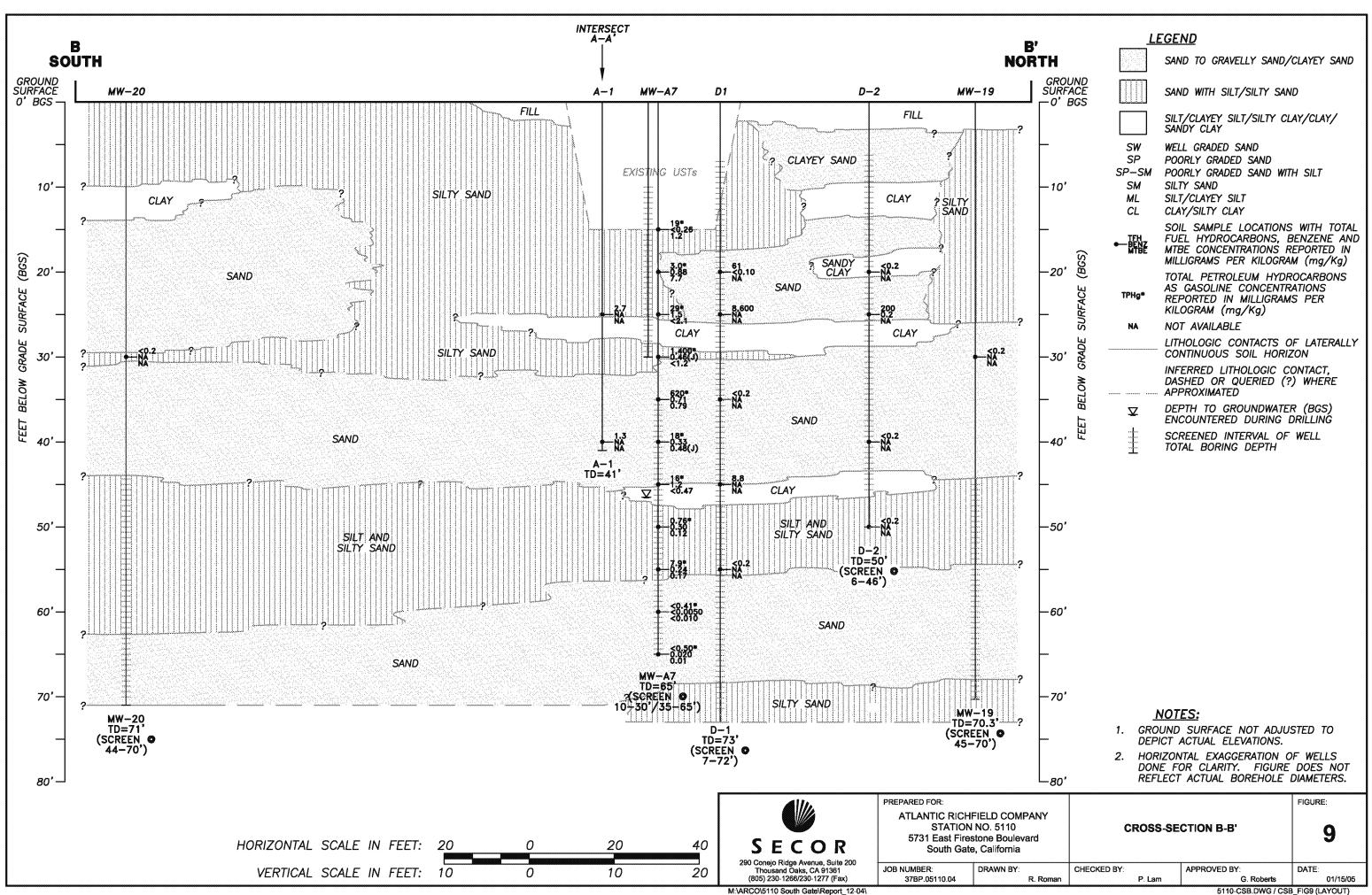
APPROVED BY:
G. Roberts

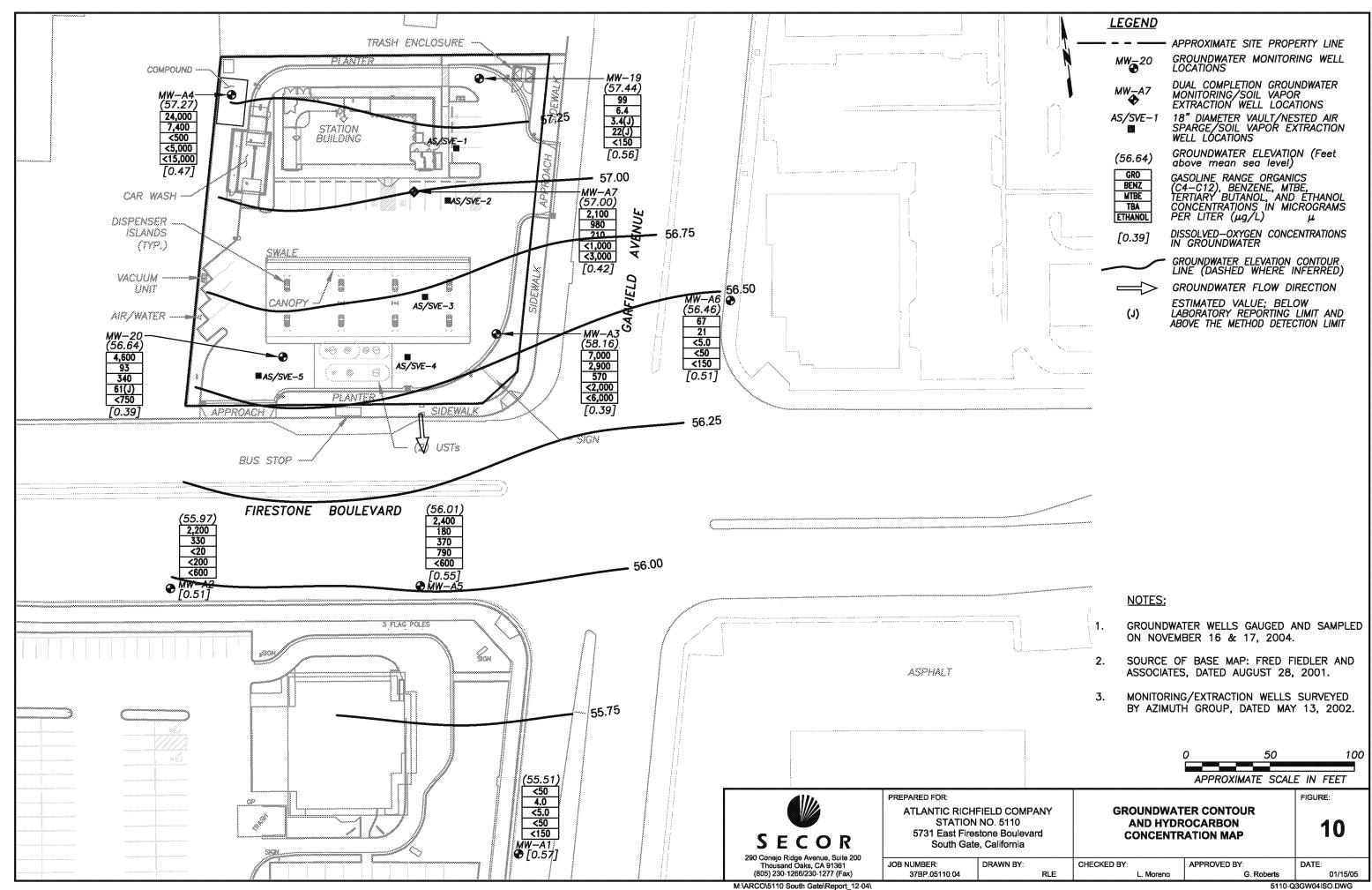
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01/15/05

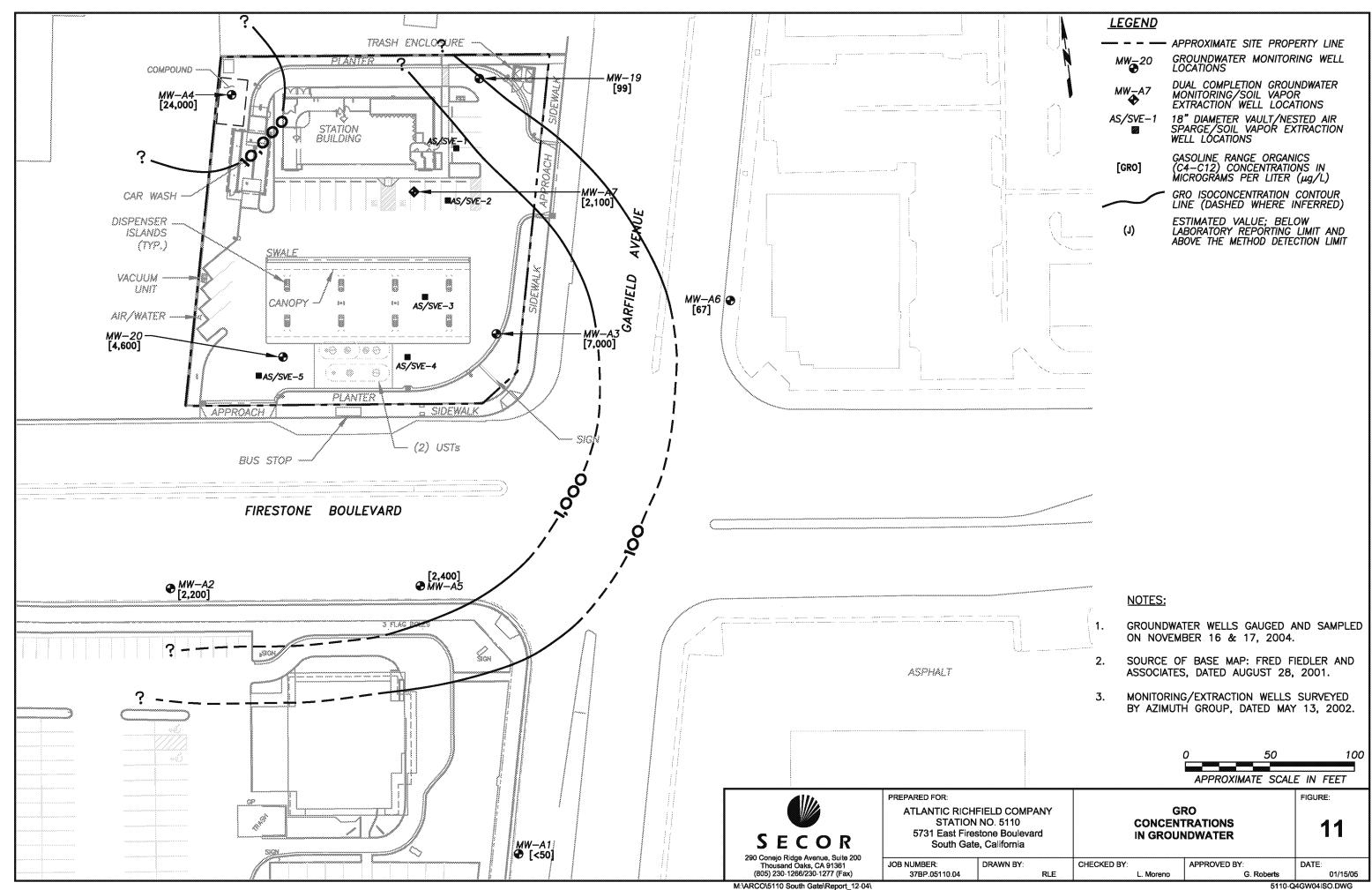


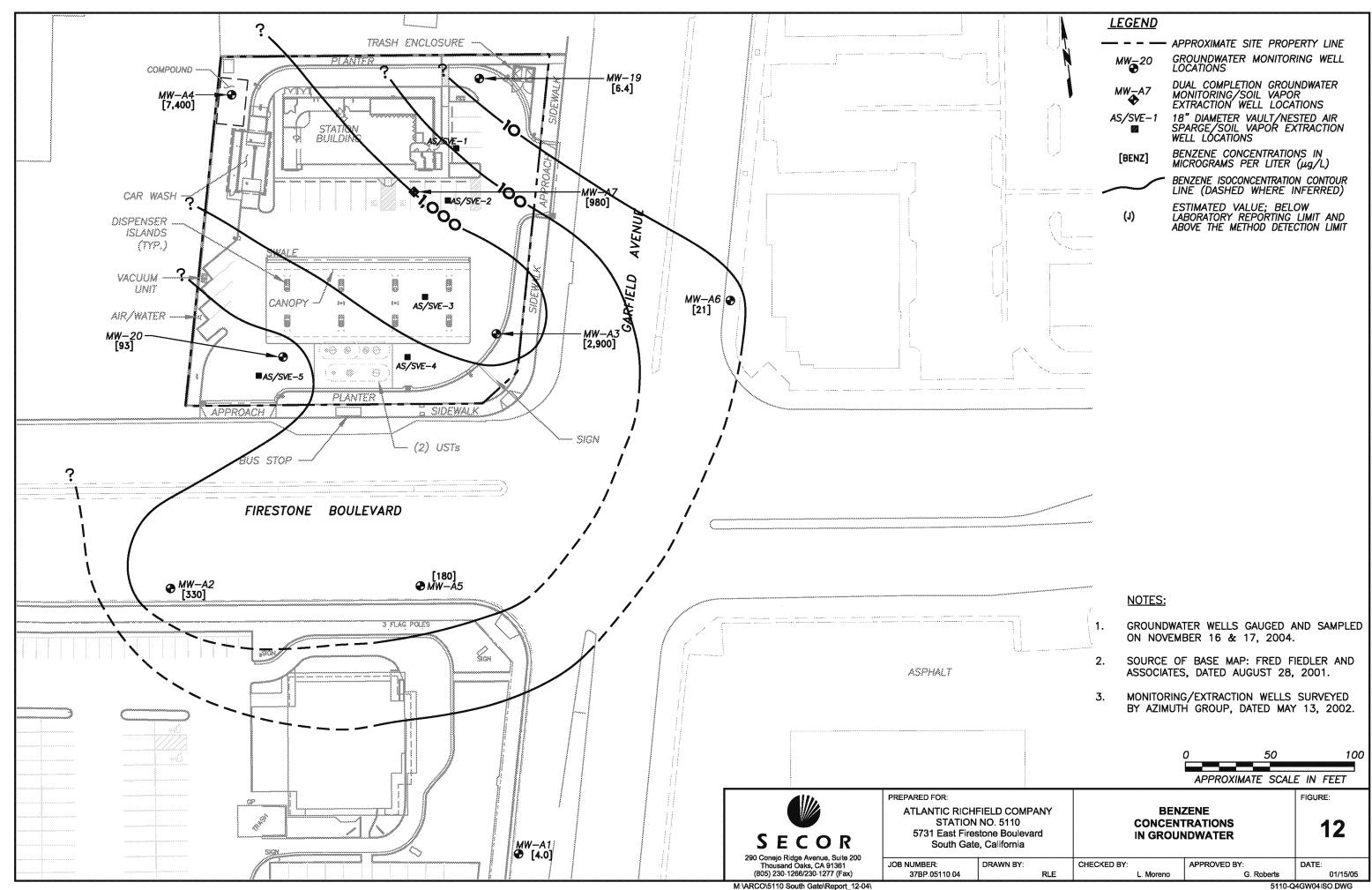


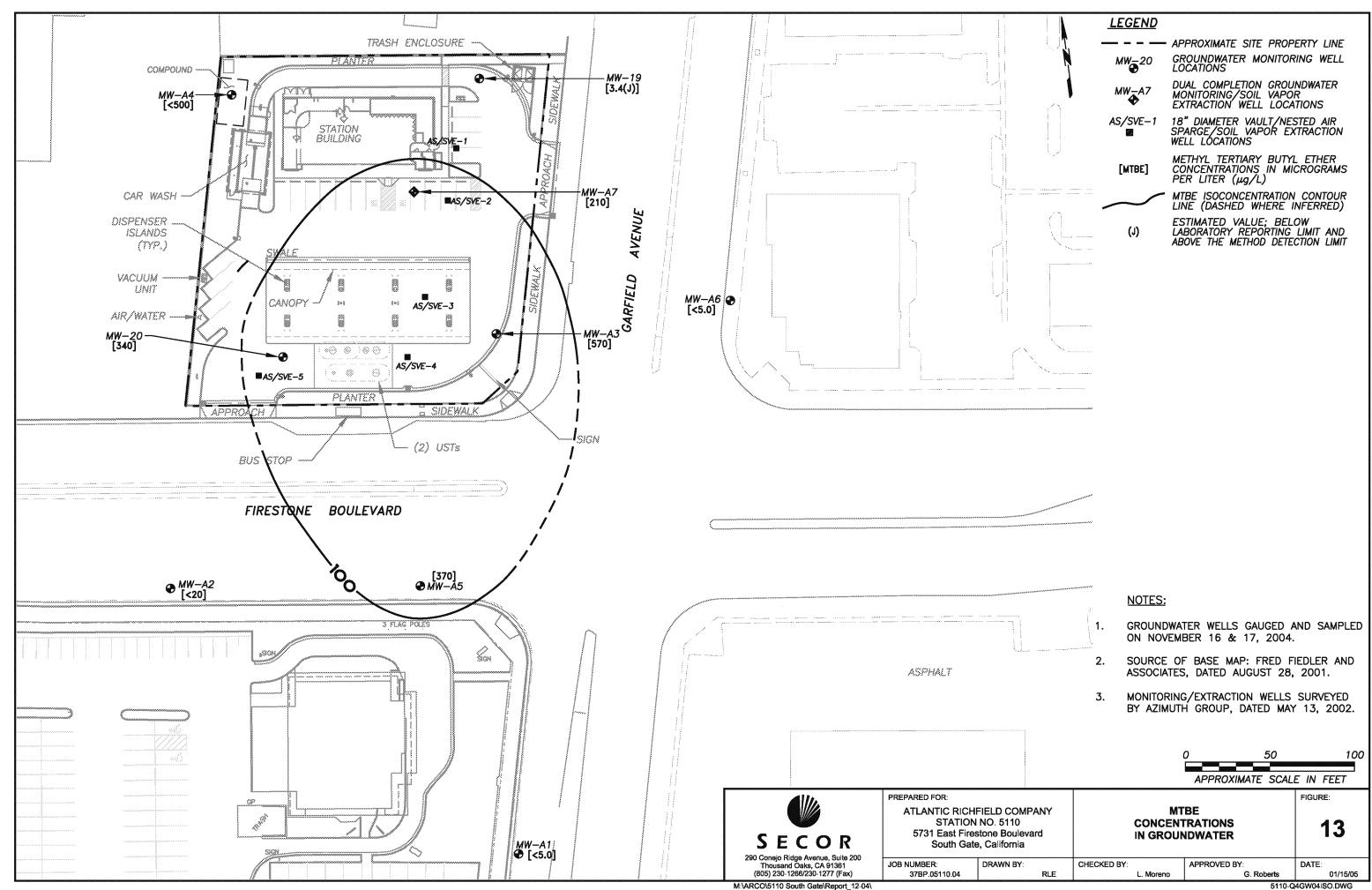


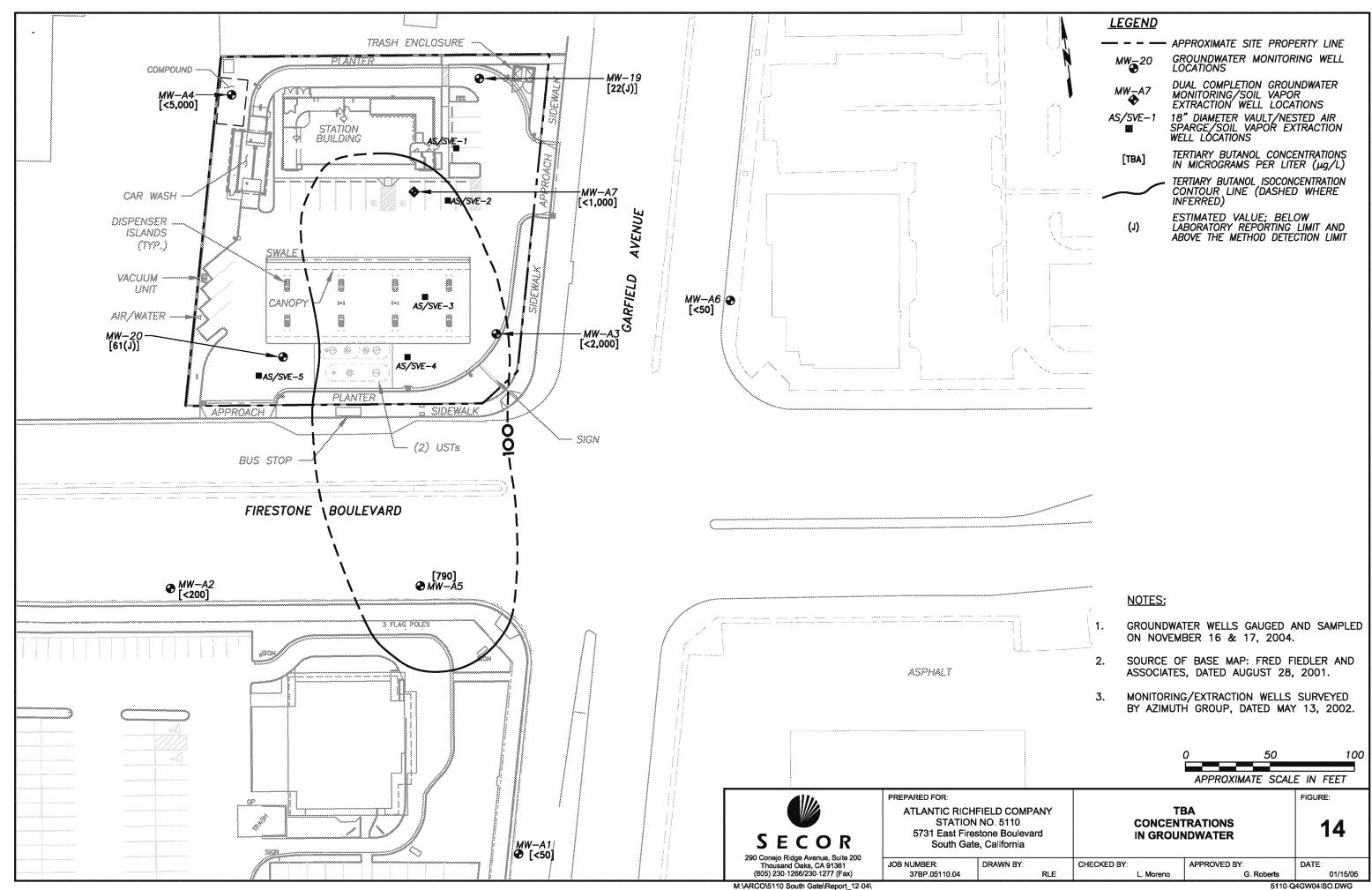


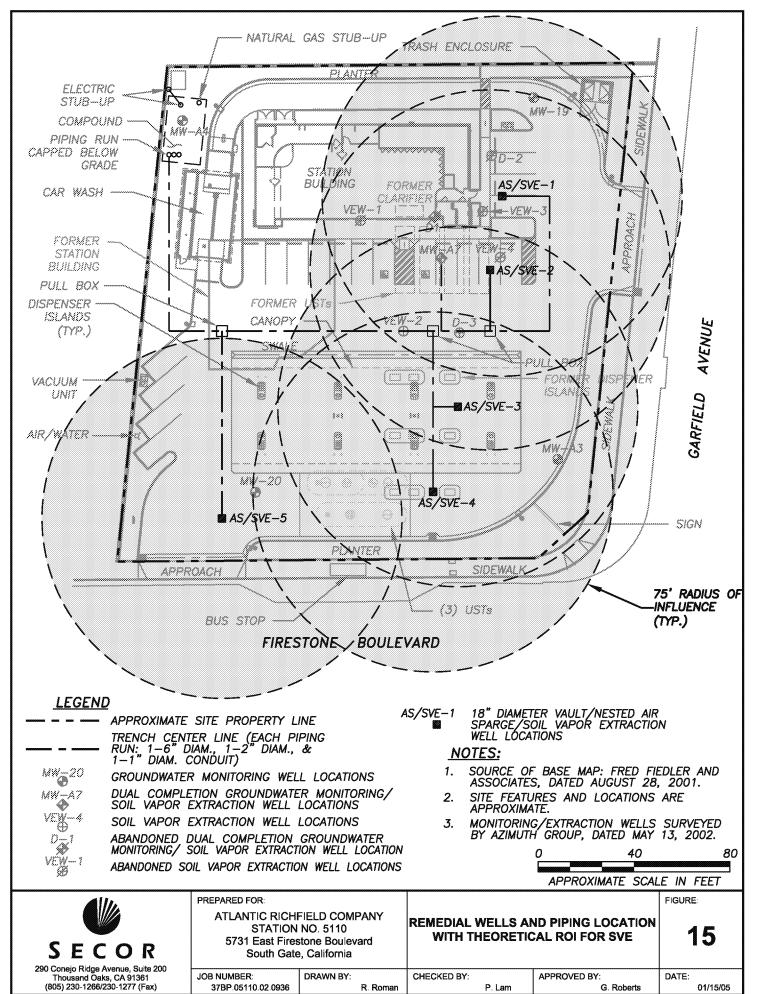


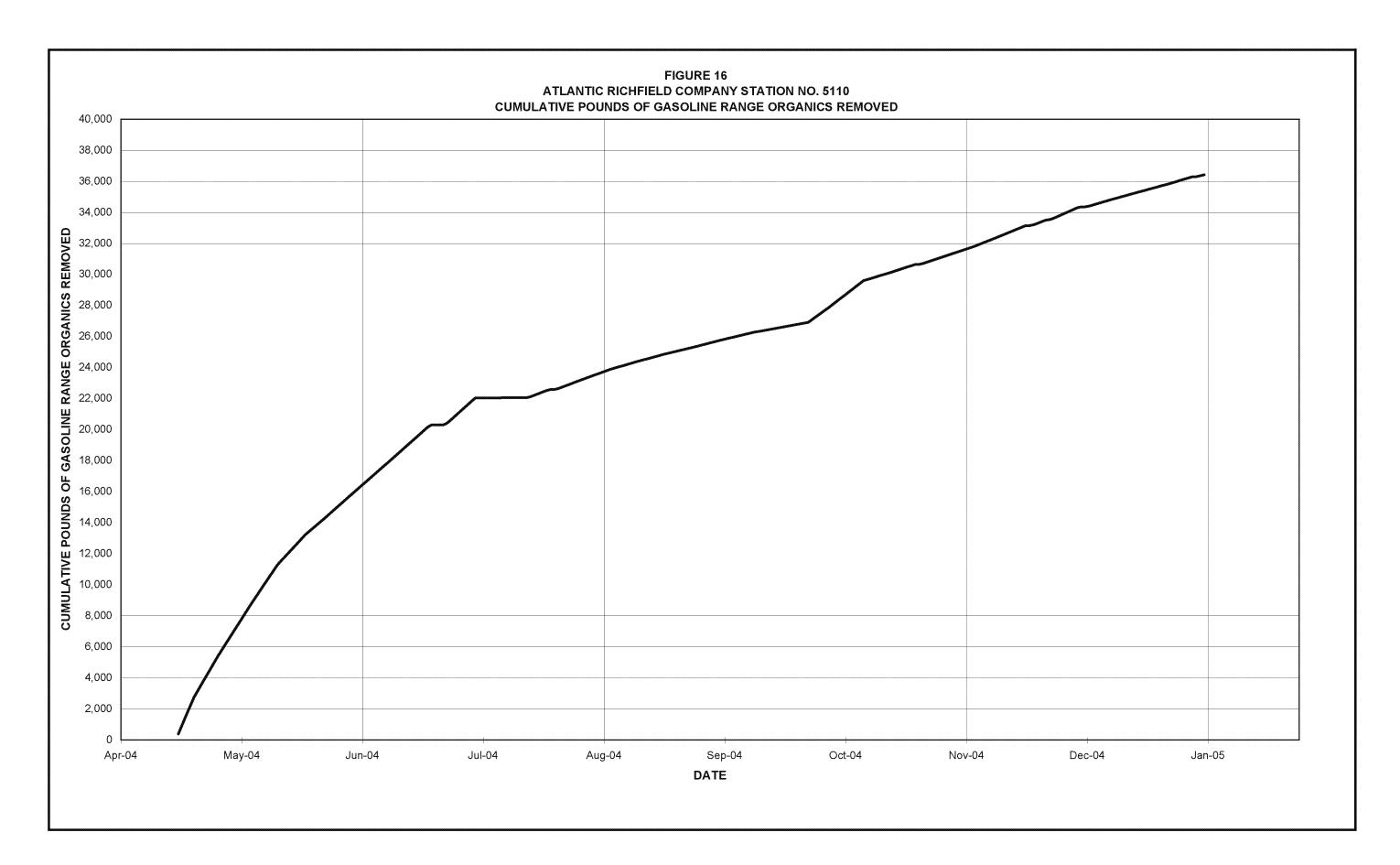












5110 SVE Tables 4-04

**TABLES** 

# TABLE 1 HISTORICAL SOIL ANALYTICAL RESULTS ATLANTIC RICHFIELD COMPANY STATION NO. 5110 5731 EAST FIRESTONE BOULEVARD SOUTH GATE, CA

EPA Method:		8015B		8260B									
Sample	Sample	TPHg	TFH	В	т	E	х	MTBE	TBA	DIPE	ETBE	TAME	ETHANOL
I.D.	Date	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Soil Boring Sar	mples												
A-1-25	09/20/89	_	2.7	_	-			_	_	_	_	_	_
A-1-40	09/20/89	_	1.3	_				_	_	_	-	_	_
A-2-30	09/20/89	_	2,600	_			==	_	_	_	_	_	_
A-2-40	09/20/89	_	1,800	_				_	_	_	_	_	_
A-3-25 A-3-40	09/20/89 09/20/89	_	16,000 <0.4					_	_	_	_		_
			-0.7										
Well Installatio MW-19-30	n Samples 09/20/89		<0.2										
MW-20-30	09/20/69	_	<0.2	_				_	_	_	_		_
				<del>-</del>					<del>-</del>	<del>-</del>	<del></del>		
UST Samples													
1A-17	10/04/89	-	0.3	-		-		-	-	-	-		-
1B-17	10/04/89	-	16	-		***		-	-	-	-		-
2A-17	10/04/89		1,400						_		-		-
2B-17	10/04/89	-	<0.2	-		-		-	-	-	-		-
3A-17	10/04/89	-	1,100	-				-	-	-	-	-	-
3B-17	10/04/89	-	7,900	-	-			-			_	-	-
4A-17.5	10/04/89	-	1,400	-	-	-			-	-	-	-	-
4B-17	10/04/89		3.0			***				-	•		-
Well Installation	n Samples												
D-1-5	06/21/90	-		-					_	_	_	-	-
D-1-10	06/21/90	_		_					_	_	_	_	_
D-1-15	06/21/90			-							-	-	-
D-1-20	06/21/90	-	61 <sup>a</sup>	< 0.10	<0.10	0.2	1.9		_	_	_	-	
D-1-25	06/21/90	_	8,600	_					_	_	_	-	-
D-1-30	06/21/90			-					-	_	_		_
D-1-35	06/21/90	_	< 0.2	-					-	_	-	-	-
D-1-40	06/21/90	-		-					-	-	-	-	-
D-1-45	06/21/90		8.8	-					-	-	-	-	-
D-1-47	06/21/90	-		-					-	-	-	-	-
D-1-50	06/21/90	-		-					-	-	-	-	-
D-1-55	06/21/90		<0.2						-	-	_		-
D-1-60	06/21/90	_		-					-	_	-	-	-
D-1-65	06/21/90	-		-					_	-	_	-	-
D-1-70	06/21/90	-			***								_
D-2-10	06/22/90	_		_					_	_	-	_	_
D-2-15	06/22/90	_		_					_	_	_	_	_
D-2-20	06/22/90	~~	< 0.2	-						-	_		-
D-2-25	06/22/90	_	200 ª	0.2	10	11	39						
D-2-30	06/22/90	_		_					-	_	_	_	_
D-2-35	06/22/90	-		-	***							-	-
D-2-40	06/22/90	-	< 0.2	_					_	-	-	_	-
D-2-45	06/22/90	_		_					_	_	_	_	-
D-2-47	06/22/90					~~							-
D-2-50	06/22/90	_	< 0.2	-					-	_	_	_	-
D-2-55	06/22/90	_		_					-	_	_	_	_
D-2-60	06/22/90	_			Marie .					***		-	-
D-2-65	06/22/90	-	**	_					_	-	-	_	-
D-2-70	06/22/90	_		_					_	_	_	_	_

### TABLE 1 HISTORICAL SOIL ANALYTICAL RESULTS ATLANTIC RICHFIELD COMPANY STATION NO. 5110 5731 EAST FIRESTONE BOULEVARD SOUTH GATE, CA

EPA Method:		8015B						8	260B				
Sample	Sample	TPHg	TFH	В	Т	E	Х	MTBE	TBA	DIPE	ETBE	TAME	ETHANOL
I.D.	Date	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
D-3-10	06/22/90				w.w.	~~			_		wa		_
D-3-15	06/22/90	_	<0.2	_					_	_	_	_	_
D-3-20	06/22/90	_		_					_	_	_	_	_
D-3-25	06/22/90	-	0.3	< 0.05	< 0.05	0.05	0.3		_		_		-
D-3-30	06/22/90	-		-					_	-	-	_	-
D-3-35	06/22/90	-	< 0.2	-					-	-	-	_	-
D-3-40	06/22/90	_		-					-		-		-
D-3-45	06/22/90	-		-					-	-	-	-	-
D-3-47	06/22/90	-	< 0.2	-					-	-	_	-	-
D-3-50	06/22/90			-					-		_	-	-
D-3-55	06/22/90	-		-	-	-			-	-	_	-	-
D-3-60	06/22/90	_		-					_	-	-	_	-
D-3-65	06/22/90	_		-					-		_		-
D-3-70	06/22/90	-				-			-			-	
D-4-10	12/16/92	-	<10	<0.005	<0.005	<0.005	0.02		-	-	-	_	-
D-4-20	12/16/92	-	<10	0.007	0.007	0.007	0.024					-	-
D-4-25	12/16/92	-	<10	0.035	0.017	0.017	0.03		-	-	-	-	-
D-4-30	12/16/92	-	<10	0.017	0.004	0.004	0.015		_	-	-	_	-
D-4-35	12/16/92	-	<10	<0.005	<0.005	<0.005	<0.015				-		-
D-4-40	12/16/92	-	<10	0.006	0.007	0.007	0.023		-	-	-	-	-
D-4-45	12/16/92	-	<10	0.13	0.01	0.01	0.19		-	-	-	_	-
D-4-50	12/16/02		<10	0.33	0.16	0.16	0.4						-
D-5-10	12/16/92	_	<10	< 0.005	< 0.005	<0.005	<0.015		_	-	_	_	-
D-5-20	12/16/92	_	<10	<0.005	< 0.005	<0.005	<0.015		_	-	_	_	-
D-5-25	12/16/92	_	<10	<0.005	< 0.005	<0.005	<0.015		_	-	_		-
D-5-30	12/16/92	-	<10	0.03	0.006	0.026	0.081		-	-	-	-	-
D-5-35	12/16/92	-	<10	<0.005	0.006	<0.005	<0.015		-	-	-	_	-
D-5-40	12/16/92		<10	0.079	<0.005	0.042	0.064				-		-
D-5-45	12/16/92	-	<10	0.17	0.02	0.076	0.13		-	-	-	-	-
D-5-50	12/16/02	-	<10	0.014	0.008	0.005	<0.015		-	_	-	-	-
D-6-10	12/16/92	_	<10	0.005	0.007	<0.005	<0.015		***	_	-		
D-6-20	12/16/92	_	<10	<0.005	< 0.005	<0.005	< 0.015			_	_		
D-6-25	12/16/92		<10	< 0.005	< 0.005	<0.005	< 0.015				_		_
D-6-30	12/16/92	_	<10	< 0.005	< 0.005	< 0.005	<0.015			_	_	_	
D-6-35	12/16/92	_	<10	<0.005	< 0.005	<0.005	< 0.015			_	_	_	
D-6-40	12/16/92	_	<10	<0.005	0.007	<0.005	0.018				_	-	
D-6-45	12/16/92	_	<10	0.014	< 0.005	0.056	0.096			_	_	-	
D-6-50	12/16/92	-	<10	0.012	< 0.005	0.006	<0.015		-	-	-	_	-
D-7-10	12/16/92	_	<10	0.011	< 0.005	<0.005	0.058			_	_		
D-7-10 D-7-20	12/16/92	_	<10	0.066	0.003	0.012	0.056			_	_	_	-
D-7-20 D-7-25	12/16/92	_	<10	0.000	1.4	0.012	1.4			_	_	_	_
D-7-23 D-7-30	12/16/92	_	<10	0.045	0.074	0.02	0.12			_	_	_	-
D-7-35	12/16/92	_	<10	0.009	0.011	< 0.005	0.024			_	_	_	
D-7-40	12/16/92	_	<10	0.006	0.013	<0.005	0.02						
D-7-45	12/16/92	_	<10	0.19	0.23	0.057	0.28			_	_	_	
D-7-50	12/16/92	_	<10	0.16	0.26	0.063	0.3			_	_	_	
\/E\A/ 4 5		-40		<0.00F	<0.005	<0.00F							
VEW-1-5	04/06/95	<1.0		<0.005	<0.005	<0.005	<0015		_	-	-	_	-
VEW-1-10 VEW-1-15	04/06/95 04/06/95	<1.0		<0.005	<0.005	<0.005	<0015		_	-	-	_	-
VEW-1-15 VEW-1-20	04/06/95	<1.0		<0.005 <0.005	<0.005	<0.005 <0.005	<0015		_		-		-
VEW-1-20 VEW-1-25	04/06/95	<1.0 <1.0		<0.005	<0.005 <0.005	<0.005	<0015 <0015	_	_	_	_		_
VEW-1-25 VEW-1-30	04/06/95	<1.0		0.0060	<0.005	<0.005	<0015	_	_	_	_		_
VEW-1-30 VEW-1-35	04/06/95	<1.0		< 0.005	<0.005	<0.005	<0015	_	_	_			_
VEW-1-35	04/06/95	<1.0		<0.005	<0.005	<0.005	<0015	_	_	_			_
VEW-1-40	04/06/95	1.6		0.003	0.18	0.065	0.22	_	_	_			_
VEW-1-60	04/06/95	<1.0		0.020	0.017	0.0067	0.024	_	_	_	-	_	
L				J.J20			J. J.Z.						

### TABLE 1 HISTORICAL SOIL ANALYTICAL RESULTS ATLANTIC RICHFIELD COMPANY STATION NO. 5110 5731 EAST FIRESTONE BOULEVARD SOUTH GATE, CA

Sample   LD.   Date   mg/kg   mg/kg	ETBE mg/kg mg/s	kg mg/kg
VEW-2-5 04/05/95 0.25 0.45 0.51 4.3		
VEW-2-10         04/05/95           1.7         6.8         14         94		-
VEW-2-10         04/05/95           1.7         6.8         14         94            VEW-2-15         04/05/95           0.031         0.079         0.019         0.15 <td></td> <td>-</td>		-
VEW-2-20         04/05/95           0.56         0.61         0.15         0.99                                                                                                    <		-
VEW-2-25         04/05/95           60         370         150         770            VEW-2-30         04/05/95           0.28         0.14         0.24         1.7		-
VEW-2-30         04/05/95           0.28         0.14         0.24         1.7 </td <td></td> <td>-</td>		-
VEW-2-35 04/05/95 <0.005 <0.005 <0.005 <0.015 <-		-
VEW-2-40         04/05/95           0.037         1         1.1         7.3		-
VEW-2-50         04/05/95           5.1         20         15         90		-
VEW-2-60         04/05/95           7.4         26         35         250              VEW-3-5         04/05/95           0.027         0.055         0.024         0.2		-
VEW-3-5         04/05/95           0.027         0.055         0.024         0.2		-
VEW-3-10 04/05/95 <0.005 <0.005 <0.005 0.031   VEW-3-15 04/05/95 <0.005 <0.005 <0.005 <0.005  VEW-3-20 04/05/95 <0.005 0.005 <0.005 0.053  VEW-3-25 04/05/95 0.68 2.6 0.93 5.4  VEW-3-30 04/05/95 16 160 140 940  VEW-3-35 04/05/95 0.84 5.8 7.2 60  VEW-3-40 04/05/95 0.84 5.8 7.2 60  VEW-3-50 04/05/95 0.14 0.28 0.070 0.39  VEW-3-50 04/05/95 0.14 0.28 0.070 0.39  VEW-3-60 04/05/95 0.095 0.94 0.30 1.8  VEW-4-10 04/05/95 <0.005 <0.005 <0.005 <0.015  VEW-4-15 04/05/95 0.0050 <0.005 0.0060 0.040  VEW-4-20 04/05/95 0.033 0.076 0.045 0.035		
VEW-3-15       04/05/95         <0.005		
VEW-3-20       04/05/95         <0.005		- - -
VEW-3-25       04/05/95        -       0.68       2.6       0.93       5.4            VEW-3-30       04/05/95         16       160       140       940            VEW-3-35       04/05/95         0.84       5.8       7.2       60            VEW-3-40       04/05/95         2.5       23       25       190            VEW-3-50       04/05/95         0.14       0.28       0.070       0.39            VEW-3-60       04/05/95         0.095       0.94       0.30       1.8            VEW-4-5       04/05/95         <0.005		- - -
VEW-3-30       04/05/95         16       160       140       940            VEW-3-35       04/05/95         0.84       5.8       7.2       60            VEW-3-40       04/05/95         2.5       23       25       190            VEW-3-50       04/05/95         0.14       0.28       0.070       0.39            VEW-3-60       04/05/95         0.095       0.94       0.30       1.8            VEW-4-5       04/05/95         <0.005		. <u>-</u>
VEW-3-35       04/05/95         0.84       5.8       7.2       60             VEW-3-40       04/05/95         2.5       23       25       190             VEW-3-50       04/05/95         0.14       0.28       0.070       0.39	 	
VEW-3-40     04/05/95       2.5     23     25     190          VEW-3-50     04/05/95       0.14     0.28     0.070     0.39          VEW-3-60     04/05/95       0.095     0.94     0.30     1.8          VEW-4-5     04/05/95       <0.005		. <u>-</u> 
VEW-3-50         04/05/95           0.14         0.28         0.070         0.39		. <u>.</u>
VEW-3-60         04/05/95          -         0.095         0.94         0.30         1.8              VEW-4-5         04/05/95           <0.005		
VEW-4-5     04/05/95       <0.005		
VEW-4-10 04/05/95 <0.005 <0.005 <0.005 <0.015 VEW-4-15 04/05/95 0.0050 <0.005 0.0060 0.040 VEW-4-20 04/05/95 0.03 0.076 0.045 0.035		
VEW-4-15 04/05/95 0.0050 <0.005 0.0060 0.040 VEW-4-20 04/05/95 0.03 0.076 0.045 0.035		
VEW-4-20 04/05/95 0.03 0.076 0.045 0.035		
		-
VEW-4-25 04/05/95 <0.005 0.011 0.0086 0.054		
VEW-4-30 04/05/95 0.69 1.4 1.7 11		-
VEW-4-35 04/05/95 < 0.005 < 0.005 0.004		-
VEW-4-40 04/05/95 <0.005 0.005 <0.005 0.019		-
VEW-4-50 04/05/95 0.042 0.17 0.056 0.39 VEW-4-60 04/05/95 2.5 8.8 2.3 11		. <del>-</del>
MW-A3-10' 12/01/99 <1.0 <0.0050 <0.0050 <0.0050 <0.015 <0.035		
MW-A3-20' 12/01/99 <1.0 <0.0050 <0.0050 <0.0050 <0.015 <0.035		
MW-A3-30' 12/01/99 <1.0 0.0079 <0.0050 <0.0050 <0.015 <0.035		
MW-A3-40' 12/01/99 1.8 0.21 0.0061 0.072 0.31 0.037		
MW-A3-45'   12/01/99		·
MW-A4-10' 12/01/99 <1.0 <0.0050 <0.0050 <0.0050 <0.015 <0.035		
MW-A4-20' 12/01/99 <1.0 <0.0050 <0.0050 <0.015 <0.035		
MW-A4-30' 12/01/99 <1.0 0.0073 <0.0050 <0.0050 <0.015 <0.035		
MW-A4-40' 12/01/99 <1.0 0.019 <0.0050 <0.0050 <0.015 <0.035	~~ ~~	
MW-A4-45' 12/01/99 <5.0 0.150 0.17 0.028 0.082 <0.005   MW-A4-55' 12/01/99 <5.0 0.0098 <0.002 0.013 0.0066 <0.005		-
MW-A4-55'   12/01/99     <5.0   0.0098   <0.002   0.013   0.0066   <0.005         MW-A4-65'   12/01/99     <5.0   0.1   <0.002   0.0073   0.0068   <0.005		
	-0.0050	
	<0.0050 <0.0	
	<0.0043 <0.0 <0.0050 <0.0	
	<0.0030 <0.0	
	<0.0043 <0.0	
	<0.0050 <0.0	
	<0.0050 <0.0	
	<0.0044 <0.0	
	<0.0045 <0.0	
	<0.0041 <0.0	
	<0.0044 <0.0	
	<0.0045 <0.0	
	<0.0050 <0.0	

TABLE 1
HISTORICAL SOIL ANALYTICAL RESULTS
ATLANTIC RICHFIELD COMPANY STATION NO. 5110
5731 EAST FIRESTONE BOULEVARD
SOUTH GATE, CA

EPA Method:		8015B						8	3260B				
Sample	Sample	TPHq	TFH	В	Т	E	х	MTBE	TBA	DIPE	ETBE	TAME	ETHANOL
I.D.	Date	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
MALAGE	10/20/01	-0.40	1	<0.0044	<0.0044	<0.0044	<0.0044	<0.0000	<0.044	<0.0000	<0.0000	<0.0000	1
MW-A6-5	10/30/01 10/30/01	<0.42 <0.42		<0.0044 <0.0040	<0.0044 <0.0040	<0.0044 <0.0040	<0.0044 <0.0040	<0.0089 <0.0081	<0.044 <0.040	<0.0089 <0.0081	<0.0089 <0.0081	<0.0089 <0.0081	
MW-A6-10 MW-A6-15	10/30/01	<0.42		<0.0040	<0.0040	<0.0040	<0.0040	<0.0081	<0.040	<0.0081	<0.0081	<0.0081	
MW-A6-20	10/30/01	< 0.45		<0.0044	<0.0044	<0.0044	<0.0044	<0.0087	<0.044	<0.0087	<0.0087	<0.0087	
MW-A6-25	10/30/01	<0.42		<0.0036	<0.0036	< 0.0036	<0.0036	<0.0083	<0.036	<0.0083	<0.0083	<0.0083	
MW-A6-30	10/30/01	<0.50		<0.0050	<0.0041	<0.0041	<0.0041	<0.0003	<0.041	<0.0063	<0.0063	<0.0003	
MW-A6-35	10/30/01	<0.50		<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.050	<0.010	<0.010	<0.010	
MW-A6-40	10/30/01	0.33		<0.0030	<0.0030	<0.0030	<0.0030	<0.0088	<0.044	<0.0088	<0.0088	<0.0088	
MW-A6-45	10/30/01	< 0.43		0.0058	<0.0044	< 0.0044	< 0.0044	<0.0084	<0.042	<0.0084	<0.0084	<0.0084	
MW-A6-50	10/30/01	< 0.42		0.0055	< 0.0042	< 0.0042	< 0.0042	<0.0084	<0.042	<0.0084	<0.0084	<0.0084	
MW-A6-55	10/30/01	< 0.45		0.0069	< 0.0045	< 0.0045	< 0.0045	<0.0090	<0.045	<0.0090	<0.0090	<0.0090	
MW-A6-60	10/30/01	< 0.50		< 0.0045	<0.0045	< 0.0045	<0.0045	<0.0090	<0.045	<0.0090	<0.0090	<0.0090	
MW-A6-65	10/30/01	< 0.44		0.0082	< 0.0044	< 0.0044	<0.0044	<0.0088	<0.044	<0.0088	<0.0088	<0.0088	
MW-A7-15	04/16/02	19		< 0.26	0.23 <sup>J</sup>	0.19 <sup>J</sup>	1.3	1.2	11	< 0.52	<0.52	< 0.52	
MW-A7-20	04/16/02	3.0 29		0.88	2.7 30	0.57	3.2 170	7.7	16 <11	< 0.50	< 0.50	< 0.50	
MW-A7-25 MW-A7-30	04/16/02 04/16/02			1.5 0.46 <sup>J</sup>	14	33 22	120	<2.1 <1.2	<6.1	<2.1 <1.2	<2.1 <1.2	<2.1 <1.2	
MW-A7-35	04/16/02	1,400 620		0.46	16	21	120	0.79	<2.6	<0.52	<0.52	<0.52	
MW-A7-40	04/16/02	18		0.71	8.1	13	69	0.79 0.48 <sup>J</sup>	<2.6	<0.52	<0.52	<0.52	
MW-A7-45	04/16/02	16		1.2	3.9	0.77	4.1	< 0.47	<2.4	< 0.47	<0.47	< 0.47	
MW-A7-50	04/16/02	0.76		0.30	0.81	0.16	0.72	0.12	0.050	<0.0090	<0.0090	<0.0090	
MW-A7-55	04/16/02	7.9		0.24	0.01	0.10	1.2	0.12	0.12	<0.010	<0.010	<0.010	
MW-A7-60	04/16/02	<0.41		< 0.0050	0.0025 <sup>J</sup>	< 0.0050	0.010	<0.010	< 0.050	<0.010	<0.010	<0.010	
MW-A7-65	04/16/02	< 0.50		0.020	0.022	0.011	0.061	0.01	<0.050	<0.010	<0.010	< 0.010	
UST Samples	00/07/00		4.00	0.000	0.00	0.07	0.00	-0.040	.0.040	0.00	40	4.0	
TK-1A-17 TK-1B-17	02/07/02	**	1.80	0.098	0.20	0.07	0.30	<0.010	<0.010	0.02	18	1.3	
TK-2A-17	02/07/02		4,600	6.9	69	69	340	<2.2	<2.2	<2.2	6.8 <sup>J</sup>	8.1	
TK-2B-17	02/07/02		17	0.29	1.2	0.30	1.8	< 0.49	< 0.49	< 0.49	1.5 <sup>J</sup>	3.0	
TK-2B-17	02/07/02	•	1,900	1.2	6.5	24	110	< 0.45	< 0.45	<0.45	8.4 5.9 <sup>J</sup>	4.6	
TK-3B-17	02/07/02 02/07/02		3,300 1.20	11 <0.27	120 0.33	71 0.14 <sup>J</sup>	390	<2.2 <0.54	<2.2 <0.54	<2.2 <0.54	23.00	4.7 1.30	
TK-4A-17	02/07/02		8,800	16	270	130	0.81 820	<27	<27	<27	<140	<27	
TK-4B-17	02/07/02		2.10	<0.26	0.11 <sup>J</sup>	<0.26	0.31	<0.52	<0.52	<0.52	24	1.3	
			2.10	~0.20	U.11	<u> </u>	0.31	~0.52		<u> </u>		1.3	
Dispenser San	-												
D-1-2	02/01/02		<0.50	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	<0.010	
D-2-2	02/01/02		<0.50	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	<0.010	
D-3-2	02/01/02		< 0.65	<0.0050	<0.0050	< 0.0050	<0.0050	<0.010	< 0.010	<0.010	<0.050	<0.010	
D-4-2	02/01/02		<0.50	<0.0050	<0.0050	< 0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	<0.010	
D-5-2	02/01/02		<1.6	< 0.0067	<0.0067	< 0.0067	<0.0067	<0.013	<0.013	<0.013	0.18	0.0099 <sup>J</sup>	
D-6-2	02/01/02		3,500	< 0.58	3.2	4.1	360	<1.2	<1.2	<1.2	4.7	2.7	
D-7-2	02/01/02		< 0.79	<0.0072	<0.0072	< 0.0072	0.025	<0.014	<0.014	<0.014	< 0.072	0.22	
D-8-2	02/01/02		<1.1 <0.50	<0.0050 <0.0068	<0.0050	<0.0050 <0.0068	<0.0050 <0.0068	<0.010 <0.014	<0.010 <0.014	<0.010 <0.014	<0.050 <0.068	0.18 <0.014	
D-9-2	02/01/02		<u>~∪.5U</u>	~U.UU08	<0.0068	<u>~∪.∪∪b</u> ŏ	<u>~∪.∪∪68</u>	<u></u> ~0.014	<0.014	<u>&lt;0.014</u>	<u></u> \U.U68	<u> ~0.014</u>	
Product Line S													
PL-1-4	02/01/02		<0.45	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	<0.010	
PL-2-4	02/01/02		<0.50	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.010	0.10	0.04	
PL-3-3	02/01/02		<0.57	<0.0064	<0.0064	<0.0064	<0.0064	<0.013	<0.013	<0.013	<0.064	<0.013	
PL-4-3	02/01/02		<0.57	<0.0045	<0.0045	<0.0045	<0.0045	<0.0091	<0.0091	<0.0091	<0.045	<0.0091	
Confirmation S	ample												
CS-1-5	02/04/02		3,200	< 0.26	1.80	2.90	23.00	< 0.53	< 0.53	< 0.53	2.3 <sup>J</sup>	6.10	
1	•		3,200	<0.26	1.80	2.90	23.00	<0.53	<0.53	<0.53	2.3 <sup>J</sup>	6.10	

TABLE 1
HISTORICAL SOIL ANALYTICAL RESULTS
ATLANTIC RICHFIELD COMPANY STATION NO. 5110
5731 EAST FIRESTONE BOULEVARD
SOUTH GATE, CA

EPA Method:		8015B						8	3260B				
Sample	Sample	TPHg	TFH	В	т	E	X	MTBE	TBA	DIPE	ETBE	TAME	ETHANOL
I.D.	Date	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Clarifier Samp	lo				1				1		<u></u>		
Claimer Samp CL-1A-7	02/05/02	8.90		<0.0068	<0.0068	<0.0068	<0.0068	<0.014	<0.014	< 0.014	0.068	< 0.014	
CL-1A-7 CL-1B-7	02/05/02	8.20		<0.0050	<0.0050	<0.0050	<0.0050	<0.014	<0.014	<0.014	< 0.050	<0.014	
		0.20		~0.0000				~0.010	~0.010				
Shoring Boring													
SB-1-10	02/07/02		<0.50	<0.0044	0.0021 <sup>J</sup>	< 0.0044	<0.0044	<0.0088	<0.0088	<0.0088	<0.044	<0.0088	
SB-2-5	02/07/02		<0.50	<0.0045	0.020	0.0046	0.028	<0.0091	<0.0091	<0.0091	<0.045	<0.0091	
SB-2-10	02/07/02		<0.42	<0.0050	0.10	0.019	0.120	<0.010	<0.010	<0.010	<0.050	<0.010	
SB-2-15	02/07/02		<0.50	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	<0.010	
SB-3-5	02/07/02		<0.45	<0.0050	0.023	0.017	0.092	<0.010	<0.010	<0.010	<0.050	<0.010	
SB-3-10	02/07/02		<0.40	<0.0041	0.0019 <sup>J</sup>	< 0.0041	0.0044	<0.0082	<0.0082	<0.0082	<0.041	<0.0082	
SB-3-15	02/07/02		<0.45	<0.0041	<0.0041	< 0.0041	<0.0041	<0.0082	<0.0082	<0.0082	<0.041	<0.0082	
SB-4-5	02/07/02		<0.50	<0.0050	0.0023 <sup>J</sup>	<0.0050	0.0051	<0.010	<0.010	<0.010	<0.050	<0.010	
SB-4-10	02/07/02		<0.40	<0.0045	<0.0045	< 0.0045	<0.0045	<0.0091	<0.0091	<0.0091	<0.045	<0.0091	
SB-4-15	02/07/02		<0.43	<0.0042	<0.0042	<0.0042	<0.0042	<0.0085	<0.0085	<0.0085	<0.042	<0.0085	
SB-5-5	02/07/02		1,200	<0.85	12	31	200	<1.7	<1.7	<1.7	<8.5	<1.7	
SB-5-10	02/07/02		65	<0.24	0.16 <sup>J</sup>	0.39	2.9	<0.48	<0.48	<0.48	<2.4	<0.48	
SB-5-15	02/07/02		850	0.20 <sup>J</sup>	7.6	14	89	<0.91	< 0.91	< 0.91	<4.5	0.55 <sup>J</sup>	
Air Sparge/Soi	l Vapor Extra	action Well	Samples										
AS/SVE-1-5	09/30/03	<1.0	·	<0.0018	<0.0018	< 0.0018	< 0.0036	<0.0045	<0.045	<0.0045	< 0.0045	<0.0045	<0.27
AS/SVE-1-10	09/30/03	<1.0		0.00053	<0.0018	0.01	<0.0036	0.0072	0.13	<0.0045	< 0.0045	<0.0045	<0.27
AS/SVE-1-15	09/30/03	4,100		0.99 <sup>J</sup>	22	49	350	<2.8	<56	<2.8	<2.8	<2.8	<170
AS/SVE-1-20	09/30/03	3,200		1.2	36	76	510	<2.5	<50	<2.5	<2.5	<2.5	<150
AS/SVE-1-25	09/30/03	2.1		< 0.10	0.18	0.081 <sup>J</sup>	0.59	0.37	0.76	<0.25	<0.25	< 0.25	<15
AS/SVE-1-30	09/30/03	1.8		1.3	14	8.4	46	1.5	<17	< 0.83	< 0.83	< 0.83	<50
AS/SVE-1-35	09/30/03	520		0.056 <sup>J</sup>	1.40	3.9	23	0.089 <sup>J</sup>	<5.9	< 0.30	<0.30	< 0.30	<18
AS/SVE-1-40	09/30/03	0.19 <sup>J</sup>		0.0021 <sup>J</sup>	0.010	0.013	0.083	0.051	0.23	<0.0058	<0.0058	<0.0058	<0.35
AS/SVE-1-45	09/30/03	1.0		0.11	0.051	0.076	0.32	0.0060	<0.044	<0.0044	< 0.0044	< 0.0044	<0.27
AS/SVE-1-50	09/30/03	0.59 <sup>J</sup>		0.15	0.011	0.095	0.28	0.097	0.11	0.0012 <sup>J</sup>	< 0.0044	< 0.0044	<0.26
AS/SVE-1-55	09/30/03	0.26 <sup>J</sup>		0.0014 <sup>J</sup>	0.0037	0.014	0.028	0.026	0.061	<0.0050	<0.0050	<0.0050	< 0.30
AS/SVE-1-60	09/30/03	<1.0		<0.0020	0.0020	0.0017 <sup>J</sup>	0.011	<0.0050	<0.050	<0.0050	<0.0050	<0.0050	< 0.30
AS/SVE-1-65	09/30/03	2.9		0.23	0.53	0.21	1.2	0.14 <sup>J</sup>	<5.0	<0.25	<0.25	<0.25	<15
AS/SVE-1-70	09/30/03	<1.0		0.041	<0.0017	< 0.0017	<0.00082 <sup>J</sup>	0.0059	<0.044	<0.0044	< 0.0044	< 0.0044	<0.26
AS/SVE-2-5													
AS/SVE-2-10	10/01/03	<1.0		< 0.0020	<0.0020	< 0.0020	<0.0040	<0.0050	< 0.050	<0.0050	<0.0050	<0.0050	< 0.30
AS/SVE-2-10 AS/SVE-2-15	10/01/03	< 0.91		< 0.0017	<0.0017	< 0.0017	<0.0035	<0.0044	<0.044	<0.0044	<0.0044	<0.0044	< 0.26
AS/SVE-2-10	10/01/03	0.14 <sup>J</sup>		0.00063 <sup>J</sup>	<0.0020	0.0011 <sup>J</sup>	0.0080	0.032	1.1	< 0.0050	<0.0050	<0.0050	< 0.30
AS/SVE-2-20 AS/SVE-2-25	10/01/03	3.40		< 0.12	<0.12	<0.12	<0.23	< 0.29	12	< 0.29	< 0.29	< 0.29	<17
AS/SVE-2-20 AS/SVE-2-30	10/01/03	27 <sup>J</sup>		0.44	1.8	0.37	2.5	3.2	10	< 0.22	< 0.22	< 0.22	<13
AS/SVE-2-30 AS/SVE-2-35	10/01/03	43 <sup>3</sup>		2.1	9.0	2.0	11	11	6.4	< 0.25	< 0.25	0.13 <sup>J</sup>	<15
AS/SVE-2-30 AS/SVE-2-40	10/01/03	2,500		1.5	40	65	300	0.54 <sup>J</sup>	<28	<1.4	<1.4	<1.4	<85
AS/SVE-2-40 AS/SVE-2-45	10/01/03	3,100		0.42 <sup>J</sup>	21	51	290	<3.0	<60	<3.0	<3.0	<3.0	<180
AS/SVE-2-45 AS/SVE-2-50	10/01/03	6,700		12	150	95	430	<2.5	<50	<2.5	<2.5	< 2.5	<150
ii	10/01/03	25 <sup>J</sup>		2.2	6.6	1.4	8.3	0.57	<4.5	< 0.23	< 0.23	<0.23	<14
AS/SVE-2-55	10/01/03	11 <sup>J</sup>		0.32	0.046	0.17	0.58	0.21	0.73	0.0026	<0.0050	0.00088	< 0.30
AS/SVE-2-60	10/01/03	<1.0		0.0029	0.0079	0.0040	0.022	0.0055	< 0.050	<0.0050	<0.0050	<0.0050	< 0.30
AS/SVE-2-65	10/01/03	<1.0		0.0022	<0.0020	<0.0020	<0.0040	0.015	< 0.050	<0.0050	<0.0050	<0.0050	< 0.30
AS/SVE-2-70	10/01/03	0.33		0.14	0.13	0.10	0.48	0.027	0.056	<0.0050	<0.0050	<0.0050	<0.30

### TABLE 1 HISTORICAL SOIL ANALYTICAL RESULTS ATLANTIC RICHFIELD COMPANY STATION NO. 5110 5731 EAST FIRESTONE BOULEVARD SOUTH GATE, CA

EPA Method:		8015B						8	3260B				
Sample	Sample	TPHg	TFH	В	Т	E	Х	MTBE	TBA	DIPE	ETBE	TAME	ETHANOL
I.D.	Date	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
AS/SVE-3-5	10/04/03	500		0.22	<0.12	4.1	3.4	<0.30	<6.0	<0.30	<0.30	<0.30	<18
AS/SVE-3-10	10/04/03	0.48 <sup>J</sup>		0.053	< 0.0016	0.047	0.053	< 0.0040	0.013 <sup>J</sup>	< 0.0040	<0.0040	<0.0040	<0.24
AS/SVE-3-15	10/04/03	0.31 <sup>J</sup>		0.0032	0.0059	0.0023	0.11	0.025	0.013 <sup>J</sup>	<0.0050	< 0.0050	<0.0050	<0.30
AS/SVE-3-20	10/04/03	0.22		0.00060 <sup>J</sup>	0.0015 <sup>J</sup>	< 0.0024	0.0030 <sup>J</sup>	0.0042 <sup>J</sup>	<0.060	<0.0060	<0.0060	<0.0060	<0.36
AS/SVE-3-25	10/04/03	80		1.6	3.8	0.59	3.3	0.45	<5.0	<0.25	< 0.25	<0.25	<15
AS/SVE-3-30	10/04/03	<1.2		0.0025	0.011	0.0031	0.022	0.022	0.011 <sup>J</sup>	< 0.0056	<0.0056	<0.0056	<0.34
AS/SVE-3-35	10/04/03	0.15 <sup>J</sup>		0.00087 <sup>J</sup>	0.0036	0.0013 <sup>J</sup>	0.0084	0.017	0.011 <sup>J</sup>	<0.0050	<0.0050	<0.0050	<0.30
AS/SVE-3-40	10/04/03	0.69 <sup>J</sup>		0.053	0.057	0.023	0.11	0.17	0.058	<0.0050	<0.0050	0.0010 <sup>J</sup>	<0.30
AS/SVE-3-45	10/04/03	0.56 <sup>J</sup>		0.036	0.014	0.024	0.10	<0.0039	<0.039	< 0.0039	< 0.0039	<0.0039	<0.23
AS/SVE-3-50	10/04/03	<43		0.48	0.75	0.18	0.57	0.061 <sup>J</sup>	<4.3	<0.21	<0.21	<0.21	<13
AS/SVE-3-55	10/04/03	1.4		0.14	0.16	0.093	0.45	0.16	0.081	0.00073	< 0.0042	0.00073 <sup>J</sup>	<0.25
AS/SVE-3-60	10/04/03	0.35 <sup>J</sup>		0.024	0.020	0.015	0.059	<0.0050	0.022 <sup>J</sup>	<0.0050	< 0.0050	<0.0050	< 0.30
AS/SVE-3-65	10/04/03	<0.87		0.0029	<0.0020	<0.0020	0.0014 <sup>J</sup>	<0.0050	< 0.050	<0.0050	<0.0050	<0.0050	<0.30
AS/SVE-3-70	10/04/03	0.12 <sup>J</sup>		0.0051	0.0068	0.0027	0.011	<0.0050	<0.050	<0.0050	<0.0050	<0.0050	<0.30
AS/SVE-4-5													
AS/SVE-4-5 AS/SVE-4-10	09/30/03 09/30/03	0.79 <sup>J</sup>		<0.10	<0.10	0.075 <sup>J</sup>	0.86	< 0.25	<5.0	< 0.25	< 0.25	<0.25	<15
AS/SVE-4-10		2,700		0.91 <sup>J</sup>	32	54	320	<2.5	<50	<2.5	<2.5	<2.5	<150
AS/SVE-4-13	09/30/03	3,100		1.4	45	41	220	<2.1	<43	<2.1	<2.1	<2.1	<130
11	09/30/03	0.16 <sup>J</sup>		0.0012 <sup>J</sup>	0.023	0.022	0.14	0.0022	0.072	<0.0062	<0.0062	<0.0062	< 0.37
AS/SVE-4-25	09/30/03	1,100		<0.46	8.9	15	84	<1.2	<23	<1.2	<1.2	<1.2	<69
AS/SVE-4-30	09/30/03	1.8		2.6	9.4	2.3	12	0.80	<8.9	< 0.44	< 0.44	< 0.44	<27
AS/SVE-4-35	09/30/03	<1.1		0.011	0.026	0.0099	0.059	0.068	0.23	<0.0050	<0.0050	<0.0050	< 0.30
AS/SVE-4-40	09/30/03	<1.1		<0.0024	<0.0024	<0.0024	0.0022 <sup>J</sup>	0.012	0.63	<0.0059	<0.0059	<0.0059	<0.36
AS/SVE-4-45	09/30/03	1.3		0.12	0.081	0.028	0.16	0.29	0.22	0.0011 <sup>J</sup>	<0.0050	0.0010 <sup>J</sup>	<0.30
AS/SVE-4-50	09/30/03	0.18 <sup>J</sup>		0.031	0.0041	0.0041	0.023	0.0011 <sup>J</sup>	< 0.050	<0.0050	<0.0050	<0.0050	<0.30
AS/SVE-4-55	09/30/03	0.56 <sup>J</sup>		0.085	0.0062	0.029	0.16	0.011	<0.050	0.00053	<0.0050	<0.0050	<0.30
AS/SVE-4-60	09/30/03	1.3		0.48	<0.090	0.16	0.45	0.058 <sup>J</sup>	<4.5	< 0.23	<0.23	< 0.23	<14
AS/SVE-4-65	09/30/03	<1.0		0.018	0.0035	0.0086	0.026	0.0019 <sup>J</sup>	<0.050	<0.0050	<0.0050	<0.0050	<0.30
AS/SVE-4-70	09/30/03	0.29		0.0011 <sup>3</sup>	0.0014 <sup>J</sup>	0.0020	0.012	<0.0050	<0.050	<0.0050	<0.0050	<0.0050	<0.30
AS/SVE-5-5	09/29/03	<1.2		<0.0023	<0.0023	< 0.0023	< 0.0046	<0.0057	< 0.057	<0.0057	< 0.0057	<0.0057	<0.34
AS/SVE-5-10	09/29/03	<0.90		<0.0020	<0.0020	<0.0020	<0.0040	<0.0050	<0.050	<0.0050	<0.0050	<0.0050	< 0.30
AS/SVE-5-15	09/29/03	<0.85		<0.0017	<0.0017	< 0.0017	<0.0034	< 0.0043	<0.043	<0.0043	<0.0043	<0.0043	<0.26
AS/SVE-5-20	09/29/03	<1.0		<0.0020	<0.0020	<0.0020	0.0014 <sup>J</sup>	<0.0050	<0.050	<0.0050	<0.0050	<0.0050	<0.30
AS/SVE-5-25	09/29/03	<1.1		<0.0024	<0.0024	<0.0024	< 0.0047	<0.0059	<0.059	<0.0059	<0.0059	<0.0059	< 0.35
AS/SVE-5-30	09/29/03	<1.0		<0.0020	<0.0020	< 0.0020	<0.0040	<0.0050	<0.050	<0.0050	<0.0050	<0.0050	< 0.30
AS/SVE-5-35	09/29/03	<1.0	**	0.00076 <sup>J</sup>	< 0.0022	< 0.0022	0.00089 <sup>J</sup>	0.0035 <sup>J</sup>	<0.056	<0.0056	<0.0056	<0.0056	< 0.33
AS/SVE-5-40	09/29/03	<1.0		0.0011 <sup>J</sup>	<0.0020	0.0013 <sup>J</sup>	0.0026 <sup>J</sup>	0.0061	<0.050	<0.0050	<0.0050	<0.0050	< 0.30
AS/SVE-5-45	09/29/03	<1.0		0.0024	<0.0020	0.0038	0.0072	0.017	<0.050	<0.0050	<0.0050	<0.0050	<0.30
AS/SVE-5-50	09/29/03	0.14 <sup>J</sup>		0.028	<0.0020	0.0063	0.013	0.0098	<0.050	<0.0050	<0.0050	<0.0050	<0.30
AS/SVE-5-55	09/29/03	<1.0		0.00089 <sup>J</sup>	<0.0020	< 0.0020	< 0.0040	0.045	0.026 <sup>J</sup>	<0.0050	<0.0050	<0.0050	<0.30
AS/SVE-5-60	09/29/03	<1.0		0.0074	<0.0020	0.0038	< 0.0040	0.079	0.060	<0.0050	< 0.0050	<0.0050	< 0.30
AS/SVE-5-65	09/29/03	0.28 <sup>J</sup>	**	0.19	0.011	0.027	0.039	0.0062	< 0.050	<0.0050	< 0.0050	<0.0050	<0.30
AS/SVE-5-70	09/29/03	< 0.89		< 0.0017	< 0.0017	< 0.0017	< 0.0035	0.0024 <sup>J</sup>	<0.044	< 0.0044	<0.0044	<0.0044	<0.26
L													

Notes:

mg/kg- Milligrams per kilogram

TPHg - Total petroleum hydrocarbons as gasoline

TFH - Total fuel hydrocarbons

B - Benzene

T - Toluene

E - Ethylbenzene

X - Total xylenes

-- - Not Analyzed

TBA - Tertiary butanol

DIPE - Di-isopropyl ether

ETBE - Ethyl-tertiary-butyl ether

TAME - Tertiary-amyl-methyl ether

MTBE - Methyl-tertiary-butyl ether

J- estimated value: below the reporting limit and above the method detection limit

< 0.0050 - Below reporting limit and method detection limit

Well No.	Date	Notes	TOC Elevation (ft-MSL)	Depth to Water (feet)	Measured SPH Thickness (feet)	Calc. GW Elev. (ft-MSL)	GRO (μg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	TBA (μg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	Ethanol (µg/L)	Sample ID	Comments
D-1	06/27/90		107.62	57.06	0.00	50.56	1,600	800	300	77	370	-	-	-	-	-	-	D-1	
	06/29/93			56.15	0.00	51.47	1,100	330	45	62	87	-	-	-	-	-	-	D-1	
	09/20/93			55.17	0.00	52.45	13,000	1,700	290	430	480	-	-	-	-	-	-	D-1	
	11/15/93			54.59	0.00	53.03	8,400	2,400	430	690	1,200	-	-	-	-	-	-	D-1	
	04/18/94			51.86	0.00	55.76	7,800	1,400	330	610	1,500	-	-	-	-	-	-	D-1	
	11/04/94			50.83	0.00	56.79	15,000	2,400	230	1,400	2,900	-	-	-	-	-	-	D-1	
	03/20/95			49.63	0.00	57.99	12,000	1,900	520	240	1,800	-	-	-	-	-	-	D-1	
	04/13/95			49.55	0.00	58.07	15,000	1,600	420	1,200	2,000	-	-	-	-	-	-	D-1	
	09/08/95			48.14	0.00	59.48	11,000	1,500	220	900	1,300	-	-	-	-	-	-	D-1	
	11/15/95			47.87	0.00	59.75	10,000	1,600	310	1,200	1,600	-	-	-	-	-	-	D-1	
	01/22/96			50.10	0.00	57.52	3,400	680	51	350	290	-	-	-	-	-	-	D-1	
	04/30/96			46.89	0.00	60.73	7,800	1,200	110	930	1,100	-	-	-	-	-	-	D-1	
	07/31/96	Α		-	-	-	-	-	-	-	-	1,800	-	-	-	-	-	D-1	Method 8260
	07/31/96			46.76	0.00	60.86	14,000	1,900	580	1,200	2,600	3,300	-	-	-	-	-	D-1	
	11/22/96			46.64	0.00	60.98	12,000	1,500	2,100	620	3,100	790	-	-	-	-	-	D-1	
	03/14/97	Α		-	-	-	-	-	-	-	-	780	-	-	-	-	-	D-1	Method 8260
	03/14/97			45.71	0.00	61.91	6,200	780	270	550	1,100	650	-	-	-	-	-	D-1	
	05/05/97			45.51	0.00	62.11	2,100	250	53	170	240	200	-	-	-	-	-	D-1	
	07/22/97	Α		-	-	-	-	-	-	-	-	93	-	-	-	-	-	D-1	Method 8260
	07/22/97			45.52	0.00	62.10	870	130	2.2	98	95	120	-	_	-	-	-	D-1	
	10/10/97			45.68	0.00	61.94	70	8.0	0.78	5.4	9.5	<10	_	-	_	_	-	D-1	
	01/30/98	Α		_	-	-	-	-	-	-	-	980	-	-	-	-	-	D-1	Method 8260
	01/30/98			45.35	0.00	62.27	10,000	1,300	350	910	2,600	770	-	-	-	-	-	D-1	
	06/05/98	Α		-	-	-	-	-	-	-	-	790	-	-	-	-	-	D-1	Method 8260
	06/05/98			44.34	0.00	63.28	11,000	1,100	150	580	1,800	630	-	_	-	-	_	D-1	
	09/14/98	Α		_	-	_	_	-	-	_	-	740	-	-	_	_	-	D-1	Method 8260
	09/14/98			43.70	0.00	63.92	11,000	1,100	150	690	1,700	770	-	-	-	_	_	D-1	
	12/18/98	Α		-	-	-	_	-	-	-	-	1,100	-	-	_	-	-	D-1	Method 8260
	12/18/98			43.40	0.00	64.22	16,000	1,800	520	1,100	3,500	1,300	-	-	-	-	-	D-1	
	02/15/99	Α		_	-	-	-		-			1,500	-		-	-		D-1	Method 8260
	02/15/99			43.45	0.00	64.17	23,000	2,700	810	1,600	5,300	1,900	-	-	-	-	-	D-1	
	05/12/99			43.35	0.00	64.27	18,000	2,200	440	1,300	3,300	1,600	_	-	_	_	_	D-1	
	09/29/99			43.24	0.00	64.38	13,000	2,000	1,200	970	3,400	1,900	-	-	_	_	-	D-1	
	09/29/99	DUP		-	-	-	13,000	2,100	1,300	1,000	3,400	1,900	-	_	-	-	-	MW-99	
	12/07/99			45.85	0.00	61.77	5,500	650	210	200	580	11,000	-	-	-	-	-	D-1	
	03/21/00		107.65	45.25	0.00	62.40	11,000	1,200	230	690	2,100	2,000	-	-	-	-	_	D-1	
	06/14/00			45.69	0.00	61.96	21,000	2,500	490	1,300	4,000	2,300	<1,000	<100	<100	<100	-	D-1	
	08/23/00			45.64	0.00	62.01	9,300	2,100	240	950	2,400	1,700	630 J	13 J	<100	12 J	_	D-1	
	12/08/00			46.70	0.00	60.95	3,800	490	44	240	500	540	200	3.1 J	<10	2.5 J	_	D-1	

### TABLE 2 Summary of Groundwater Analytical & Elevation Results ARCO Station No. 5110

5731 East Firestone Blvd., South Gate, California

Well No.	Date	Notes	TOC Elevation (ft-MSL)	Depth to Water (feet)	Measured SPH Thickness (feet)	Calc. GW Elev. (ft-MSL)	GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	Ethanol (µg/L)	Sample ID	Comments
D-1	02/15/01		107.65	46.89	0.00	60.76	14,000	2,400	380	1,000	4,100	4,000	1,100	<50	<50	<50	-	D-1	
	06/14/01			46.98	0.00	60.67	340	25	<1.5	2.6	13	160	78	<5.0	<5.0	<5.0	-	D-1	
	09/14/01			47.64	0.00	60.01	250	9.7	4.0	2.2	4.3	180	76	1.6 J	<5.0	<5.0	-	D-1	
	12/07/01			48.04	0.00	59.61	7,700	1,800	330	630	1,700	1,100	600	5.4 J	<12	3.9 J	-	D-1	
	03/28/02	ABN		-	_	-	-	-	-	-	-	-	-	-	-	-	-	-	

Well No.	Date	Notes	TOC Elevation (ft-MSL)	Depth to Water (feet)	Measured SPH Thickness (feet)	Calc. GW Elev. (ft-MSL)	GRO (μg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	Ethanol (µg/L)	Sample ID	Comments
MW-A1	01/30/98		107.68	44.38	0.00	63.30	<50	<0.30	<0.30	<0.30	<0.60	<10	-	-	-	-	-	MW-A1	
	06/05/98			43.30	0.00	64.38	<50	<0.30	<0.30	<0.30	<0.60	<10	-	-	-	-	-	MW-A1	
	09/14/98			42.75	0.00	64.93	<50	<0.30	<0.30	<0.30	<0.60	<10	-	-	-	-	-	MW-A1	
	12/18/98			42.65	0.00	65.03	<50	<0.30	<0.30	<0.30	0.93	<10	-	-	-	-	-	MW-A1	
	02/15/99			42.80	0.00	64.88	64	1.0	8.3	1.7	11	<10	-	-	-	-	-	MW-A1	
	05/12/99			42.90	0.00	64.78	<50	<0.3	<0.3	<0.3	<0.6	<10	-	-	_	-	-	MW-A1	
	09/29/99			43.95	0.00	63.73	<50	<2.0	<2.0	<2.0	<4.0	<5.0	-	_	-	-	-	MW-A1	
	12/07/99			44.45	0.00	63.23	<50	<2.0	<2.0	<2.0	<4.0	<5.0	-	-	-	-	-	MW-A1	
	03/21/00		105.52	44.47	0.00	61.05	<50	<2.0	<2.0	<2.0	<4.0	<5.0	-	-	-	-	-	MW-A1	
	06/14/00	INA		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Paved over
l	08/23/00	INA		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Paved over
	12/08/00			46.30	0.00	59.22	50	1.5	<0.30	0.33	<0.60	<5.0	<50	<5.0	<5.0	<5.0	-	MW-A1	
	02/15/01			46.45	0.00	59.07	<50	< 0.30	< 0.30	<0.30	0.99	<5.0	<50	<5.0	<5.0	<5.0	-	MW-A1	
	06/14/01			46.65	0.00	58.87	<50	<0.30	<0.30	0.50	<0.60	<5.0	<50	<5.0	<5.0	<5.0	-	MW-A1	
	09/14/01			47.25	0.00	58.27	22 J	<0.30	0.23 J	0.32	0.54 J	4.9 J	5.8 J	<5.0	<5.0	<5.0	-	MW-A1	
	12/07/01			47.68	0.00	57.84	<100	<5.0	<5.0	<5.0	1.1 J	8.0	9.5 J	<5.0	<5.0	<5.0	-	MW-A1	
	03/28/02			47.71	0.00	57.81	<100	<5.0	<5.0	<5.0	<5.0	19	15 J	<5.0	<5.0	<5.0	-	MW-A1	
	06/06/02		107.69	47.93	0.00	59.76	30 J	<2.0	<2.0	<2.0	<4.0	11	20 J	<5.0	<5.0	<5.0	-	MW-A1	
	09/05/02			48.75	0.00	58.94	28 J	<2.0	<2.0	<2.0	<4.0	18	21 J	<5.0	<5.0	<5.0	-	MW-A1	
	12/05/02			49.35	0.00	58.34	50	<2.0	<2.0	<2.0	<4.0	18	28 J	<5.0	<5.0	<5.0	-	MW-A1	
I	02/18/03			49.61	0.00	58.08	23 J	<2.0	<2.0	<2.0	<4.0	12	17 J	0.91 J	<5.0	<5.0	<150	MW-A1	
	05/19/03			49.71	0.00	57.98	29 J	<2.0	<2.0	<2.0	<4.0	14	20 J	1.6 J	<5.0	<5.0	<150	MW-A1	
	08/19/03			49.98	0.00	57.71	<50	<2.0	<2.0	<2.0	<4.0	7.2	7.5 J	1.0 J	<5.0	<5.0	<150	MW-A1	
	11/18/03			50.42	0.00	57.27	26 J	<2.0	<2.0	<2.0	<4.0	4.8 J	6.5 J	0.58 J	<5.0	<5.0	<150	MW-A1	
	02/24/04			50.70	0.00	56.99	<50	<2.0	<2.0	<2.0	<4.0	2.7 J	5.4 J	0.69 J	<5.0	<5.0	<150	MW-A1	
	05/25/04			51.01	0.00	56.68	<50	0.94 J	<2.0	<2.0	<4.0	4.1 J	<50	0.56 J	<5.0	<5.0	<150	MW-A1	
	08/24/04			51.57	0.00	56.12	25 J	1.4 J	0.55 J	0.26 J	0.74 J	2.0 J	<50	0.39 J	<5.0	<5.0	<150	MW-A1	
	11/16/04			52.18	0.00	55.51	<50	4.0	<2.0	<2.0	<4.0	<5.0	<50	<5.0	<5.0	<5.0	<150	MW-A1	

Well No.	Date	Notes	TOC Elevation (ft-MSL)	Depth to Water (feet)	Measured SPH Thickness (feet)	Calc. GW Elev. (ft-MSL)	GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	Ethanol (µg/L)	Sample ID	Comments
MW-A2	01/30/98		107.91	41.76	0.00	66.15	390	15	3.0	1.6	3.2	<10	-	-	-	-	-	MW-A2	
	06/05/98			38.90	0.00	69.01	190	7.8	<0.30	1.3	3.4	13	-	-	-	-	-	MW-A2	
	09/14/98			38.90	0.00	69.01	220	12	0.68	1.3	2.2	<10	-	-	-	-	-	MW-A2	
	12/18/98			37.30	0.00	70.61	250	9.7	1.4	1.4	2.5	<20	-	-	-	-	-	MW-A2	
	02/15/99			36.85	0.00	71.06	350	15	6.6	2.9	12	12	-	-	-	-	-	MW-A2	
	05/12/99			36.45	0.00	71.46	310	7.5	1.5	0.93	2.1	<10	-	-	-	-	-	MW-A2	
	09/29/99			36.57	0.00	71.34	<50	7.6	<2.0	<2.0	<4.0	<10	-	-	-	-	-	MW-A2	
	12/07/99			39.61	0.00	68.30	98	4.9	<2.0	<2.0	<4.0	<5.0	-	-	-	-	-	MW-A2	
	03/21/00		105.25	37.37	0.00	67.88	84	3.9	<2.0	<2.0	<4.0	<5.0	-	-	-	-	-	MW-A2	
	06/14/00			37.95	0.00	67.30	50	2.8	<2.0	<2.0	<4.0	<5.0	<50	<5.0	<5.0	<5.0	-	MW-A2	
	08/23/00			38.04	0.00	67.21	<500	2.6	0.34 J	0.42 J	1.2 J	<5.0	<50	<5.0	<5.0	<5.0	-	MW-A2	
	12/08/00			38.95	0.00	66.30	77	2.3	0.70	0.52	1.6	<5.0	<50	<5.0	<5.0	<5.0	-	MW-A2	
	02/15/01			46.42	0.00	58.83	<50	1.2	<0.30	<0.30	<0.60	<5.0	<50	<5.0	<5.0	<5.0	-	MW-A2	
	06/14/01			39.45	0.00	65.80	<50	0.66	<0.30	<0.30	<0.60	<5.0	<50	<5.0	<5.0	<5.0	-	MW-A2	
	09/14/01			40.86	0.00	64.39	24 J	0.35	0.63	0.15 J	<0.60	<5.0	<50	<5.0	<5.0	<5.0	-	MW-A2	
	12/07/01			44.18	0.00	61.07	<100	<5.0	<5.0	<5.0	<5.0	<5.0	<50	<5.0	<5.0	<5.0	-	MW-A2	
	03/28/02			45.36	0.00	59.89	<100	<5.0	<5.0	<5.0	<5.0	<5.0	<25	<5.0	<5.0	<5.0	-	MW-A2	
	03/28/02	DUP	107.40	-	-	-	<100	<5.0	<5.0	<5.0	<5.0	<5.0	<25	<5.0	<5.0	<5.0	-	MW-99	
	06/06/02			43.87	0.00	63.53	53	<2.0	0.26 J	<2.0	0.38 J	<5.0	<50	<5.0	<5.0	<5.0	-	MW-A2	
	06/06/02	DUP		-	-	-	12 J	<2.0	0.14 J	<2.0	0.22 J	<5.0	<50	<5.0	<5.0	<5.0	-	MW-99	
	09/05/02			51.20	0.00	56.20	11 J	<2.0	<2.0	<2.0	0.19 J	<5.0	<50	<5.0	<5.0	<5.0	-	MW-A2	
	12/05/02			45.85	0.00	61.55	34 J	13	<2.0	4.9	0.55 J	2.9 J	2.0 J	<5.0	<5.0	<5.0	-	MW-A2	
	02/18/03			47.68	0.00	59.72	26 J	5.6	<2.0	2.3	<4.0	0.72 J	<50	<5.0	<5.0	<5.0	<150	MW-A2	
	05/19/03			48.51	0.00	58.89	97	19	0.61 J	12	<4.0	1.8 J	<50	<5.0	<5.0	<5.0	<150	MW-A2	
	08/19/03			49.05	0.00	58.35	57	13	0.41 J	5.4	<4.0	<5.0	<50	<5.0	<5.0	<5.0	<150	MW-A2	
	11/18/03			49.46	0.00	57.94	740	270	25	72	21	1.2 J	<50	<5.0	<5.0	<5.0	<150	MW-A2	
	02/24/04			49.85	0.00	57.55	2,700	920	34	200	150	<50	<500	<50	<50	<50	<1,500	MW-A2	
	05/25/04			50.13	0.00	57.27	7,000	2,100	460	420	990	<200	<2,000	<200	<200	<200	<6,000	MW-A2	
	08/24/04			51.03	0.00	56.37	4,300	1,500	260	230	440	<200	<2,000	<200	<200	<200	<6,000	MW-A2	
	11/16/04			51.43	0.00	55.97	2,200	330	46	61	130	<20	<200	<20	<20	<20	<600	MW-A2	

Well No.	Date	Notes	TOC Elevation (ft-MSL)	Depth to Water (feet)	Measured SPH Thickness (feet)	Calc. GW Elev. (ft-MSL)	GRO (μg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (μg/L)	MTBE (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	Ethanol (μg/L)	Sample ID	Comments
MW-A3	12/07/99		106.00	44.72	0.00	61.28	16,000	2,900	510	1,000	3,800	390	-	-	-	-	-	MW-A3	
	03/21/00		106.76	45.15	0.00	61.61	9,000	3,000	550	810	2,000	180	-	-	-	-	-	MW-A3	
	06/14/00			45.39	0.00	61.37	1,500	190	14	53	210	44	130	<10	<10	<10	-	MW-A3	
	08/23/00			45.17	0.00	61.59	2,500	460	25	230	99	28	25 J	3.6 J	<25	<25	-	MW-A3	
	08/23/00	DUP		-	-	-	3,000	470	42	220	160	32	32 J	3.3 J	<20	<20	-	MW-99	
	12/08/00			46.04	0.00	60.72	3,000	410	20	150	270	27	20 J	2.3 J	<5.0	<5.0	-	MW-A3	
	02/15/01			46.20	0.00	60.56	2,800	690	14	300	120	39	<50	<5.0	<5.0	<5.0	-	MW-A3	
	06/14/01			46.37	0.00	60.39	2,800	720	<6.0	350	58	42	<50	<5.0	<5.0	<5.0	-	MW-A3	
	09/14/01			46.99	0.00	59.77	4,200	1,300	36	340	510	43	20 J	2.4 J	<5.0	<5.0	-	MW-A3	
	12/07/01			47.46	0.00	59.30	7,700	2,900	51 J	730	1,100	62	18 J	3.0 J	<5.0	<5.0	-	MW-A3	
	03/28/02		108.97	47.75	0.00	61.22	4,200	1,800	<50	420	250	75	21 J	2.8 J	<5.0	<5.0	-	MW-A3	
	06/06/02			47.98	0.00	60.99	5,100	1,900	7.1	500	380	50	54	2.2 J	<5.0	<5.0	-	MW-A3	
	09/05/02			48.75	0.00	60.22	2,800	1,100	10	240	560	120	34 J	<20	<20	<20	-	MW-A3	
	12/05/02			49.47	0.00	59.50	4,200	1,600	3.4 J	670	180	200	51 J	3.6 J	<20	<20	-	MW-A3	
	02/18/03			49.66	0.00	59.31	6,500	1,300	<2.0	660	280	320	100 J	<50	<50	<50	<1,500	MW-A3	
	05/19/03			49.81	0.00	59.16	3,100	910	<20	74	58	240	54 J	<50	<50	<50	<1,500	MW-A3	
	08/19/03			50.04	0.00	58.93	4,700	1,400	<40	260	390	300	<1,000	6.8 J	<100	<100	<3,000	MW-A3	
	11/18/03			50.93	0.00	58.04	4,000	1,300	<40	280	460	280	170 J	12 J	<100	<100	<3,000	MW-A3	
	02/24/04			50.84	0.00	58.13	11,000	3,700	<50	330	800	500	400 J	24 J	<120	<120	<3,800	MW-A3	
	02/24/04	DUP		-	-	-	12,000	3,800	<100	310	760	520	380 J	25 J	<250	<250	<7,500	Dup-5110-20040224	
	05/25/04			51.17	0.00	57.80	7,900	3,700	<50	210	370	520	520 J	23 J	<120	<120	<3,800	MW-A3	
	05/25/04	DUP		-	-	-	7,400	2,800	<100	160	270	430	380 J	18 J	<250	<250	<7,500	Dup-5110-20040525	
	08/24/04			51.67	0.00	57.30	9,600	4,000	<50	150	200	720	570 J	23 J	<120	<120	<3,800	MW-A3	
	08/24/04	DUP		-	-	-	9,100	1,900	<100	78 J	98 J	320	290 J	<250	<250	<250	<7,500	DUP-5110-20040824	
	11/16/04			50.81	0.00	58.16	7,000	2,900	<80	<80	<160	570	<2,000	<200	<200	<200	<6,000	MW-A3	
	11/16/04	DUP		-	-	-	4,900	2,300	<40	<40	<80	520	<1,000	<100	<100	<100	<3,000	DUP-5110-20041116	

TABLE 2
Summary of Groundwater Analytical & Elevation Results
ARCO Station No. 5110
5731 East Firestone Blvd., South Gate, California

Well No.	Date	Notes	TOC Elevation (ft-MSL)	Depth to Water (feet)	Measured SPH Thickness (feet)	Calc. GW Elev. (ft-MSL)	GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	Ethanol (µg/L)	Sample ID	Comments
MW-A4	12/07/99		108.48	45.57	0.00	62.91	36,000	6,500	8,400	1,400	4,900	<500	-	-	-	_	-	MW-A4	
	03/21/00		108.56	46.00	0.00	62.56	28,000	7,400	9,800	1,500	4,200	<500	-	-	-	-	-	MW-A4	
	03/21/00	DUP		-		-	34,000	7,200	9,700	1,400	4,200	<500	-	-	-	-	-	MW-99	
	06/14/00			46.45	0.00	62.11	44,000	8,600	11,000	1,700	6,100	<400	<4,000	<400	<400	<400	-	MW-A4	
	06/14/00	DUP		-	-	-	42,000	9,000	12,000	1,800	6,500	<400	<4,000	<400	<400	<400	-	MW-99	
	08/23/00			46.11	0.00	62.45	49,000	9,000	13,000	1,700	6,300	20 J	<4,000	<400	<400	<400	-	MW-A4	
	12/08/00			47.50	0.00	61.06	45,000	7,900	8,500	1,500	5,000	<20	86 J	<20	<20	<20	-	MW-A4	
	12/08/00	DUP		-	-	-	46,000	8,200	9,000	1,600	5,500	1.1 J	110	<5.0	<5.0	<5.0	-	MW-99	
	02/15/01			47.66	0.00	60.90	22,000	5,500	4,100	440	3,100	<20	<200	<20	<20	<20	-	MW-A4	
	02/15/01	DUP		-	-	-	23,000	5,300	4,000	120	3,600	<5.0	<50	<5.0	<5.0	<5.0	-	MW-99	
	06/14/01			47.78	0.00	60.78	29,000	7,200	4,800	1,600	4,800	<5.0	<50	<5.0	<5.0	<5.0	-	MW-A4	
	06/14/01	DUP		-	-	-	29,000	6,600	4,400	1,500	4,400	<5.0	<50	<5.0	<5.0	<5.0	-	MW-99	
	09/14/01			48.38	0.00	60.18	33,000	7,700	7,100	1,700	4,900	<20	<200	<20	<20	<20	-	MW-A4	
	09/14/01	DUP		-	-	-	33,000	6,600	6,100	1,500	4,200	<5.0	54	<5.0	<5.0	<5.0	-	MW-99	
	12/07/01			48.85	0.00	59.71	21,000	5,200	2,800	800 J	3,100	<5.0	94	<5.0	<5.0	<5.0	-	MW-A4	
	12/07/01	DUP		-	-	-	24,000	5,200	3,000	790 J	3,200	<5.0	110	<5.0	<5.0	<5.0	-	MW-99	
	03/28/02			49.10	0.00	59.46	12,000	5,000	640	1,300	1,200	<20	47 J	<20	<20	<20	-	MW-A4	
	06/06/02		110.71	49.30	0.00	61.41	20,000	5,200	1,400	1,200	2,000	<20	56 J	<20	<20	<20	-	MW-A4	
	09/05/02			50.07	0.00	60.64	14,000	5,000	920	910	2,000	<50	<500	<50	<50	<50	-	MW-A4	
	09/05/02	DUP		-	-	-	11,000	3,500	320	740	570	0.31 J	46 J	<5.0	<5.0	<5.0	-	MW-99	
	12/05/02			50.12	0.00	60.59	11,000	3,200	420	480	1,000	<25	51 J	<25	<25	<25	-	MW-A4	
	12/05/02	DUP		-	-	-	10,000	2,300	310	460	840	<25	59 J	<25	<25	<25	-	MW-99	
	02/18/03			59.99	0.00	50.72	21,000	3,500	510	800	2,300	<100	<1,000	<100	<100	<100	<3,000	MW-A4	
	02/18/03	DUP		-	-	-	36,000	7,100	1,200	1,600	5,600	<500	<5,000	<500	<500	<500	<15,000	MW-99	
	05/19/03			51.13	0.00	59.58	23,000	5,400	1,300	1,200	3,800	<500	<5,000	<500	<500	<500	<15,000	MW-A4	
	05/19/03	DUP		-	-	-	21,000	5,000	1,200	1,000	3,400	<500	<5,000	<500	<500	42 J	<15,000	MW-99	
	08/19/03			61.33	0.00	49.38	11,000	4,400	490	950	2,600	<250	<2,500	<250	<250	<250	<7,500	MW-A4	
	08/19/03	DUP		-	-	-	16,000	5,000	540	960	2,700	<500	<5,000	<500	<500	<500	<15,000	MW-99	
	11/18/03			51.84	0.00	58.87	16,000	4,500	1,600	880	3,000	<250	<2,500	<250	<250	<250	<7,500	MW-A4	
	11/18/03	DUP		-	-	-	12,000	4,500	1,700	910	3,000	<200	220 J	<200	<200	<200	<6,000	Dup-5110-20031118	
	02/24/04			52.00	0.00	58.71	9,900	4,000	670	650	1,500	<250	<2,500	<250	<250	<250	<7,500	MW-A4	
	05/25/04			52.37	0.00	58.34	22,000	8,400	1,900	1,500	4,500	<250	<2,500	<250	<250	<250	<7,500	MW-A4	
	08/24/04			52.26	0.00	58.45	20,000	7,000	1,200	1,100	2,700	<250	<2,500	<250	<250	<250	<7,500	MW-A4	
	11/16/04			53.44	0.00	57.27	24,000	7,400	980	1,100	2,700	<500	<5,000	<500	<500	<500	<15,000	MW-A4	

Well No.	Date	Notes	TOC Elevation (ft-MSL)	Depth to Water (feet)	Measured SPH Thickness (feet)	Calc. GW Elev. (ft-MSL)	GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	Ethanol (µg/L)	Sample ID	Comments
MW-A5	12/07/01		105.72	47.11	0.00	58.61	<100	1.4 J	<5.0	<5.0	<5.0	<5.0	<50	<5.0	<5.0	<5.0	-	MW-A5	
	03/28/02			47.36	0.00	58.36	110	<5.0	<5.0	1.1 J	2.4 J	<5.0	<25	<5.0	<5.0	<5.0	-	MW-A5	
	06/06/02		107.91	47.52	0.00	60.39	23 J	<2.0	<2.0	0.19 J	0.47 J	0.30 J	<50	<5.0	<5.0	<5.0	-	MW-A5	
	09/05/02			48.37	0.00	59.54	120	<2.0	<2.0	0.35 J	0.43 J	<5.0	<50	<5.0	<5.0	<5.0	-	MW-A5	
	12/05/02			49.05	0.00	58.86	60	<2.0	<2.0	<2.0	<4.0	0.58 J	8.4 J	<5.0	<5.0	<5.0	-	MW-A5	
	02/18/03			49.06	0.00	58.85	300	1.9 J	<2.0	5.8	31	27	15 J	1.6 J	<5.0	<5.0	<150	MW-A5	
	05/19/03			49.41	0.00	58.50	680	35	<10	59	300	100	97 J	7.8 J	<25	<25	<750	MW-A5	
	08/19/03			49.70	0.00	58.21	260	3.9	0.38 J	1.9 J	62	73	61	4.1 J	<5.0	<5.0	<150	MW-A5	
	11/18/03			50.15	0.00	57.76	420	6.4	1.0 J	4.4	140	140	180	7.3	<5.0	<5.0	<150	MW-A5	
X	02/24/04			50.43	0.00	57.48	660	16	1.8 J	16	220	160	310	10	<10	<10	<300	MW-A5	
	05/25/04			50.74	0.00	57.17	1,000	26	1.6 J	22	190	290	440	14	<10	<10	<300	MW-A5	
	08/24/04			51.30	0.00	56.61	1,000	74	16	37	250	290	770	15	<10	<10	<300	MW-A5	
	11/16/04			51.90	0.00	56.01	2,400	180	<8.0	93	660	370	790	<20	<20	<20	<600	MW-A5	
MW-A6	12/07/01		105.78	46.86	0.00	58.92	150	59	<5.0	<5.0	<5.0	<5.0	18 J	<5.0	<5.0	<5.0	-	MW-A6	
	03/28/02			47.06	0.00	58.72	58 J	31	<5.0	<5.0	<5.0	<5.0	10 J	<5.0	<5.0	<5.0	-	MW-A6	
	06/06/02		107.90	47.26	0.00	60.64	77	30	<2.0	0.18 J	0.31 J	<5.0	18 J	<5.0	<5.0	<5.0	-	MW-A6	
	09/05/02			48.20	0.00	59.70	74	22	<2.0	<2.0	<4.0	<5.0	23 J	<5.0	<5.0	<5.0	-	MW-A6	
Ĭ	12/05/02			48.75	0.00	59.15	78	28	<2.0	<2.0	<4.0	<5.0	18 J	<5.0	<5.0	<5.0	-	MW-A6	
	02/18/03			47.85	0.00	60.05	60	13	<2.0	<2.0	<4.0	<5.0	26 J	<5.0	<5.0	<5.0	<150	MW-A6	
	05/19/03			48.98	0.00	58.92	66	25	<2.0	<2.0	<4.0	<5.0	15 J	<5.0	<5.0	<5.0	<150	MW-A6	
	08/19/03			49.21	0.00	58.69	56	24	<2.0	<2.0	<4.0	<5.0	12 J	<5.0	<5.0	<5.0	<150	MW-A6	
	11/18/03			49.62	0.00	58.28	59	17	<2.0	<2.0	<4.0	<5.0	11 J	<5.0	<5.0	<5.0	<150	MW-A6	
	02/24/04			49.91	0.00	57.99	58	20	<2.0	<2.0	<4.0	<5.0	13 J	<5.0	<5.0	<5.0	<150	MW-A6	
	05/25/04			50.25	0.00	57.65	62	19	<2.0	<2.0	<4.0	<5.0	8.2 J	<5.0	<5.0	<5.0	<150	MW-A6	
	08/24/04			50.87	0.00	57.03	94	24	0.39 J	<2.0	<4.0	<5.0	<50	<5.0	<5.0	<5.0	<150	MW-A6	
	11/16/04			51.44	0.00	56.46	67	21	<2.0	<2.0	<4.0	<5.0	<50	<5.0	<5.0	<5.0	<150	MW-A6	
MW-A7	06/06/02		110.63	49.32	0.00	61.31	55,000	3,500	6,300	2,400	13,000	1,700	1,200	7.1	<5.0	<5.0	-	MW-A7	
	09/05/02			50.12	0.00	60.51	37,000	3,300	3,800	2,400	13,000	2,400	670	<50	<50	16 J	-	MW-A7	
	12/05/02			50.85	0.00	59.78	19,000	2,900	46	1,600	9,100	1,500	630 J	<100	<100	7.4 J	-	MW-A7	
	02/18/03			51.00	0.00	59.63	19,000	2,600	21 J	1,000	4,000	670	400 J	<200	<200	<200	<6,000	MW-A7	
	05/19/03			51.15	0.00	59.48	18,000	2,800	42 J	1,400	6,500	1,700	300 J	<200	<200	<200	<6,000	MW-A7	
	08/19/03			51.37	0.00	59.26	14,000	3,000	<80	1,200	2,400	1,800	530 J	<200	<200	<200	<6,000	MW-A7	
	11/18/03			51.85	0.00	58.78	7,500	1,800	<80	1,200	440	1,700	640 J	<200	<200	<200	<6,000	MW-A7	
	02/24/04			52.07	0.00	58.56	5,800	4,100	15 J	640	210	190 J	<2,000	<200	<200	<200	<6,000	MW-A7	
	05/25/04			52.38	0.00	58.25	4,200	1,800	<80	470	47 J	550	320 J	<200	<200	<200	<6,000	MW-A7	
	08/24/04			52.80	0.00	57.83	4,100	1,600	<80	80	<160	730	890 J	11 J	<200	<200	<6,000	MW-A7	
	11/16/04			53.63	0.00	57.00	2,100	980	<40	<40	<80	210	<1,000	<100	<100	<100	<3,000	MW-A7	

Well No.	Date	Notes	TOC Elevation (ft-MSL)	Depth to Water (feet)	Measured SPH Thickness (feet)	Calc. GW Elev. (ft-MSL)	GRO (μg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	TBA (μg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	Ethanol (µg/L)	Sample ID	Comments
MW-19	06/26/90		107.07	57.21	0.00	49.86	700	140	<10	<10	<10	-	-	-	-	-	-	MW-19	
	06/29/93			55.37	0.00	51.70	870	100	0.90	65	18	-	-	-	-	-	-	MW-19	
	09/20/93			54.48	0.00	52.59	2,100	91	4.1	51	27	-	-	-	-	-	-	MW-19	
	11/15/93			53.99	0.00	53.08	1,100	65	0.80	20	23	-	-	-	-	-	-	MW-19	
	04/18/94			51.38	0.00	55.69	1,200	38	4.0	5.0	3.0	-	-	-	-	-	-	MW-19	
	11/04/94			50.37	0.00	56.70	490	7.0	<0.3	<0.3	<0.5	-	-	-	-	-	-	MW-19	
	03/20/95			49.05	0.00	58.02	240	1.3	<0.30	<0.30	<0.60	-	-	-	-	-	-	MW-19	
	04/13/95			48.90	0.00	58.17	230	2.1	<0.30	<0.30	<0.60	-	-	-	-	-	-	MW-19	
	09/08/95			48.63	0.00	58.44	250	8.1	<0.30	<0.30	<0.60	-	-	-	-	-	-	MW-19	
	11/15/95			47.33	0.00	59.74	350	7.2	0.34	0.51	<0.60	-	-	-	-	-	-	MW-19	
	01/22/96			49.53	0.00	57.54	250	5.4	<0.30	29	10	-	-	-	-	-	-	MW-19	
	04/30/96			46.35	0.00	60.72	250	5.1	<0.30	<0.30	<0.60	-	-	-	-	-	-	MW-19	
	07/31/96			46.24	0.00	60.83	530	7.4	2.2	0.93	68	<10	-	-	-	-	-	MW-19	
	11/22/96			46.11	0.00	60.96	350	1.2	0.39	<0.30	<0.60	<10	-	-	-	-	-	MW-19	
	03/14/97			45.12	0.00	61.95	260	32	1.4	<0.30	2.0	44	-	-	-	-	-	MW-19	
	05/05/97			44.93	0.00	62.14	190	3.1	<0.30	<0.30	0.86	<10	-	-	-	-	-	MW-19	
	07/22/97			44.83	0.00	62.24	270	16	0.71	<0.30	1.9	<10	-	-	-	-	-	MW-19	
	10/10/97			45.05	0.00	62.02	520	29	0.85	0.41	3.7	34	-	-	-	-	-	MW-19	
	01/30/98			44.75	0.00	62.32	630	31	3.3	0.59	8.2	<10	-	-	-	-	-	MW-19	
	06/05/98			43.75	0.00	63.32	1,700	230	7.5	73	66	40	-	-	-	-	-	MW-19	
	09/14/98			43.35	0.00	63.72	3,600	780	120	55	81	<100	-	-	-	-	-	MW-19	
	12/18/98			42.60	0.00	64.47	15,000	3,700	3,500	500	1,800	<1,000	-	-	-	-	-	MW-19	
	02/15/99			42.20	0.00	64.87	14,000	3,300	2,800	480	1,600	<1,000	-	-	-	-	-	MW-19	
	05/12/99			41.65	0.00	65.42	18,000	3,300	2,700	600	2,100	<2,000	-	-	-	-	-	MW-19	
	09/21/99	Α		-	-	-	-	4,800	4,800	870	3,200	410	-	-	-	-	-	MW-19	Method 8260
	09/21/99			41.58	0.00	65.49	14,000	4,400	4,400	800	2,900	<1,000	-	-	~	-	-	MW-19	
	12/07/99			39.61	0.00	67.46	23,000	3,900	3,800	780	2,800	<250	-	-	-	-	-	MW-19	
	12/07/99	DUP		-	-	-	20,000	3,800	3,700	770	2,800	<250	-	-	-	-	-	MW-99	
	03/21/00		107.12	43.38	0.00	63.74	52,000	7,900	6,800	1,300	5,200	<100	-	-	-	-	-	MW-19	
	06/14/00			43.60	0.00	63.52	39,000	8,700	7,500	1,900	7,400	<250	<2,500	<250	<250	<250	-	MW-19	
	08/23/00			44.01	0.00	63.11	29,000	9,300	970	2,000	4,900	21 J	<4,000	<400	<400	<400	-	MW-19	

Well No.	Date	Notes	TOC Elevation (ft-MSL)	Depth to Water (feet)	Measured SPH Thickness (feet)	Calc. GW Elev. (ft-MSL)	GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	TBA (μg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	Ethanol (µg/L)	Sample ID	Comments
MW-19	12/08/00		107.12	44.45	0.00	62.67	27,000	6,800	230	1,300	3,200	7.7 J	85 J	<20	<20	<20	-	MW-19	
	02/15/01			45.68	0.00	61.44	12,000	3,800	570	610	1,300	<20	<200	<20	<20	<20	-	MW-19	
	06/14/01			45.58	0.00	61.54	8,100	2,400	250	390	870	25	<200	<20	<20	<20	-	MW-19	
	09/14/01			46.59	0.00	60.53	10,000	3,000	34	800	400	15 J	<200	<20	<20	<20	-	MW-19	
	12/07/01			46.88	0.00	60.24	11,000	3,400	<500	980	210 J	14 J	<500	<50	<50	<50	-	MW-19	
	03/28/02			47.48	0.00	59.64	7,600	2,500	<250	840	140 J	9.0 J	28 J	<10	<10	<10	-	MW-19	
	06/06/02		109.25	47.74	0.00	61.51	7,700	1,800	2.1 J	720	20	8.4 J	<100	<10	<10	<10	-	MW-19	
	09/05/02			48.65	0.00	60.60	2,500	770	1.0 J	240	1.9 J	9.7 J	36 J	<10	<10	<10	-	MW-19	
	12/05/02			49.30	0.00	59.95	480	270	<2.0	23	<4.0	8.0	68	<5.0	<5.0	<5.0	-	MW-19	
	02/18/03			49.61	0.00	59.64	310	39	<2.0	3.1	<4.0	6.8	87	<5.0	<5.0	<5.0	<150	MW-19	
	05/19/03			49.63	0.00	59.62	120	4.2	<2.0	3.9	0.59 J	7.7	86	<5.0	<5.0	<5.0	<150	MW-19	
	08/19/03			49.85	0.00	59.40	140	8.2	<2.0	0.87 J	4.3	4.2 J	70	<5.0	<5.0	<5.0	<150	MW-19	
	11/18/03			50.41	0.00	58.84	80	4.4	<2.0	0.47 J	<4.0	2.5 J	52	<5.0	<5.0	<5.0	<150	MW-19	
	02/24/04			50.27	0.00	58.98	140	6.8	0.53 J	0.99 J	0.95 J	3.0 J	35 J	<5.0	<5.0	<5.0	<150	MW-19	
	05/25/04			50.90	0.00	58.35	76	9.9	0.51 J	0.65 J	0.58 J	2.2 J	36	<5.0	<5.0	<5.0	<150	MW-19	
	08/24/04			51.38	0.00	57.87	100	12	0.58 J	1.2 J	1.5 J	1.9 J	22 J	<5.0	<5.0	<5.0	<150	MW-19	
	11/16/04	NS		51.81	0.00	57.44	-	-	-	-	-	-	-	-	-	-	-	-	
	11/17/04			-	-	-	99	6.4	<2.0	0.50 J	<4.0	3.4 J	22 J	0.25 J	<5.0	<5.0	<150	MW-19	

Well No.	Date	Notes	TOC Elevation (ft-MSL)	Depth to Water (feet)	Measured SPH Thickness (feet)	Calc. GW Elev. (ft-MSL)	GRO (μg/L)	B (µg/L)	T (µg/L)	E (µg/L)	Χ (μg/L)	MTBE (µg/L)	TBA (μg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	Ethanol (µg/L)	Sample ID	Comments
MW-20	06/26/90		106.37	56.65	0.00	49.72	400	10	<2	<2	22	-	-	-	-	-	-	MW-20	
	06/29/93			54.95	0.00	51.42	1,400	240	41	37	120	-	-	-	-	-	-	MW-20	
	09/20/93			54.17	0.00	52.20	2,500	440	160	74	240	-	-	-	-	-	-	MW-20	
Ĭ	11/15/93			53.57	0.00	52.80	500	41	120	6.0	15	-	-	-	-	-	-	MW-20	
	04/18/94			52.47	0.00	53.90	720	90	49	23	81	-	-	-	-	-	-	MW-20	
	11/04/94			49.97	0.00	56.40	4,900	1,200	72	430	870	-	-	-	-	-	-	MW-20	
	03/20/95			48.76	0.00	57.61	1,600	330	12	46	150	-	-	-	-	-	-	MW-20	
	04/13/95			48.49	0.00	57.88	6,100	1,100	18	350	580	-	-	-	-	-	-	MW-20	
	09/08/95			47.42	0.00	58.95	5,300	1,500	15	420	650	-	-	-	-	-	-	MW-20	
	11/15/95			47.12	0.00	59.25	6,300	230	6.8	370	540	-	-	-	-	-	-	MW-20	
	01/22/96			49.31	0.00	57.06	1,900	430	<3.0	220	370	-	-	-	-	-	-	MW-20	
	04/30/96			46.10	0.00	60.27	3,100	630	<6.0	560	560	-	-	-	-	-	-	MW-20	
	07/31/96			46.10	0.00	60.27	1,500	200	1.9	140	240	43	-	-	-	-	-	MW-20	
	11/22/96			45.93	0.00	60.44	1,800	280	3.4	230	310	<10	-	-	-	-	-	MW-20	
	03/14/97			44.91	0.00	61.46	2,800	350	<3.0	340	500	<10	-	-	-	-	-	MW-20	
	05/05/97			44.55	0.00	61.82	1,700	130	1.7	220	130	64	-	-	-	-	-	MW-20	
	07/22/97			44.70	0.00	61.67	960	130	1.8	120	160	<25	-	-	-	-	-	MW-20	
	10/10/97	Α		-	-	-	-	-	-	-	-	16	-	-	-	-	-	MW-20	Method 8260
	10/10/97			44.88	0.00	61.49	4,500	730	<5.1	580	750	96	-	-	-	-	-	MW-20	
	01/30/98			44.46	0.00	61.91	1,600	310	17	160	100	<20	-	-	-	-	-	MW-20	
	06/05/98			43.35	0.00	63.02	830	67	3.7	1.6	5.8	48	-	-	-	-	-	MW-20	
	09/14/98			42.35	0.00	64.02	1,400	170	13	52	140	<50	-	-	-	-	-	MW-20	
	12/18/98			42.45	0.00	63.92	580	52	5.3	25	31	33	-	-	-	-	-	MW-20	
	02/15/99			42.35	0.00	64.02	480	39	3.0	24	19	23	-	-	-	-	-	MW-20	
	05/12/99			42.65	0.00	63.72	170	22	3.2	16	8.5	<10	-	-	-	-	-	MW-20	
	09/21/99	Α		-	-	-	-	22	<2.0	<2.0	<4.0	6.5	-	-	-	-	-	MW-20	Method 8260
	09/21/99			43.29	0.00	63.08	200	18	<0.30	1.3	0.95	<10	-	-	-	-	-	MW-20	
	12/07/99			43.76	0.00	62.61	220	16	<2.0	2.7	<4.0	10	-	-	-	-	-	MW-20	
	03/21/00		106.44	44.14	0.00	62.30	170	18	<1.0	0.46 J	<1.0	11	-	-	-	-	-	MW-20	
	06/14/00			44.54	0.00	61.90	110	37	<2.0	3.1	<4.0	20	<50	<5.0	<5.0	<5.0	-	MW-20	
	08/23/00			44.19	0.00	62.25	58	6.8	0.31 J	3.4	5.0	59	82	1.7 J	<5.0	<5.0	-	MW-20	
	12/08/00			45.67	0.00	60.77	7,200	980	96	450	980	190	360	4.3 J	<5.0	<5.0	-	MW-20	
	02/15/01			45.85	0.00	60.59	2,700	510	26	52	370	99	120	<5.0	<5.0	<5.0	-	MW-20	
	06/14/01			46.02	0.00	60.42	14,000	2,500	<60	830	1,700	700	<500	<50	<50	<50	-	MW-20	888888
	09/14/01			46.75	0.00	59.69	7,700	1,600	16	650	980	1,000	330	6.2 J	<12	9.0 J	-	MW-20	
	12/07/01			47.12	0.00	59.32	14,000	3,100	<500	1,500	2,100	1,500	940	6.0 J	<20	7.0 J	-	MW-20	
	03/28/02			47.59	0.00	58.85	8,100	1,600	<250	750	650	1,500	350	<20	<20	<20	-	MW-20	***************************************
	06/06/02		108.58	47.57	0.00	61.01	7,700	1,400	3.4 J	740	370	1,600	720	5.2 J	<25	7.4 J	-	MW-20	000000
	09/05/02			48.35	0.00	60.23	6,800	1,900	3.4 J	900	200	1,500	420	4.9 J	<20	10 J	-	MW-20	

Well No.	Date	Notes	TOC Elevation (ft-MSL)	Depth to Water (feet)	Measured SPH Thickness (feet)	Calc. GW Elev. (ft-MSL)	GRO (μg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	TBA (μg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	Ethanol (µg/L)	Sample ID	Comments
MW-20	12/05/02		108.58	49.03	0.00	59.55	6,100	1,800	4.6 J	760	37	2,100	470	5.2 J	<20	8.8 J	-	MW-20	
	02/18/03			49.30	0.00	59.28	8,800	1,900	<50	680	73 J	2,000	720 J	<120	<120	11 J	<3,800	MW-20	
	05/19/03			49.46	0.00	59.12	4,600	1,500	<50	520	48 J	1,900	510 J	<120	<120	12 J	<3,800	MW-20	
	08/19/03			49.70	0.00	58.88	5,500	920	<50	270	39 J	1,900	420 J	<120	<120	10 J	<3,800	MW-20	
Ì	11/18/03			50.31	0.00	58.27	2,700	430	<50	110	28 J	1,200	410 J	<120	<120	<120	<3,800	MW-20	
	02/24/04			50.14	0.00	58.44	5,000	1,100	<50	420	110	3,300	660 J	<120	<120	18 J	<3,800	MW-20	
	05/25/04			50.74	0.00	57.84	4,600	860	<40	420	62 J	3,400	920 J	6.2 J	<100	19 J	<3,000	MW-20	
00000	08/24/04			51.26	0.00	57.32	4,600	760	<40	330	56 J	3,600	660 J	6.4 J	<100	28 J	<3,000	MW-20	
00000	11/16/04			51.94	0.00	56.64	4,600	93	<10	36	5.8 J	340	61 J	<25	<25	2.5 J	<750	MW-20	
Field Blank	11/18/03		_	_	-	-	24 J	<2.0	<2.0	<2.0	<4.0	<5.0	8.4 J	<5.0	<5.0	<5.0	<150	FB-5110-20031118	
	11/16/04			-	-	-	<50	<2.0	<2.0	<2.0	<4.0	<5.0	<50	<5.0	<5.0	<5.0	<150	FB-5110-20031116	
Trip Blank	09/29/99		-	-	-	-	<50	<2.0	<2.0	<2.0	<4.0	<5.0	-	-	-	-	-	MW-100	
	12/07/99			-	-	-	<50	<2.0	<2.0	<2.0	<4.0	<5.0	-	-	-	-	-	MW-100	
Ĭ	06/14/00			-	-	-	<50	<2.0	<2.0	<2.0	<4.0	<5.0	<50	<5.0	<5.0	<5.0	-	MW-100	
	08/23/00			-	-	-	<50	0.19 J	0.31 J	0.084 J	<4.0	<5.0	15 J	<5.0	<5.0	<5.0	-	MW-100	
	12/08/00			-	-	-	<50	<0.30	< 0.30	<0.30	<0.60	<5.0	<50	<5.0	<5.0	<5.0	-	MW-100	
	02/15/01			-	-	-	<50	<0.30	<0.30	<0.30	< 0.60	<5.0	<50	<5.0	<5.0	<5.0	-	MW-100	
	06/14/01			-	-	-	<50	<0.30	< 0.30	<0.30	<0.60	<5.0	<50	<5.0	<5.0	<5.0	-	MW-100	
XX	09/14/01			-	-	-	<50	<0.30	<0.30	<0.30	<0.60	<5.0	<50	<5.0	<5.0	<5.0	-	MW-100	
	12/07/01			-	-	-	<100	<5.0	<5.0	<5.0	<5.0	<5.0	<50	<5.0	<5.0	<5.0	-	MW-100	
	03/28/02			-	-	-	<100	<5.0	<5.0	<5.0	<5.0	<5.0	<25	<5.0	<5.0	<5.0	-	MW-100	
	06/06/02			-	-	-	9.7 J	<2.0	0.18 J	<2.0	0.20 J	<5.0	<50	<5.0	<5.0	<5.0	-	MW-100	
	09/05/02			_	-	-	12 J	<2.0	0.47 J	<2.0	<4.0	<5.0	<50	<5.0	<5.0	<5.0	-	MW-100	
	12/05/02			_	_	-	15	<2.0	<2.0	<2.0	<4.0	<5.0	<50	<5.0	<5.0	<5.0	-	MW-100	
	02/18/03			-	-	-	<50	<2.0	<2.0	<2.0	<4.0	<5.0	<50	<5.0	<5.0	<5.0	<150	MW-100	
	05/19/03			-	-	-	11 J	<2.0	<2.0	<2.0	<4.0	<5.0	<50	<5.0	<5.0	<5.0	<150	MW-100	
	08/19/03			-	-	-	<50	<2.0	<2.0	<2.0	<4.0	<5.0	<50	<5.0	<5.0	<5.0	<150	MW-100	
	11/18/03			-	-	-	<50	<2.0	<2.0	<2.0	<4.0	<5.0	<50	<5.0	<5.0	<5.0	<150	TB-5110-20031118	

### TABLE 2

### Summary of Groundwater Analytical & Elevation Results ARCO Station No. 5110

### 5731 East Firestone Blvd., South Gate, California

Well No.	Date	Notes	TOC Elevation (ft-MSL)	Depth to Water (feet)	Measured SPH Thickness (feet)	Calc. GW Elev. (ft-MSL)	GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	Ethanol (µg/L)	Sample ID	Comments
Trip Blank	02/24/04		-	-	-	-	<50	<2.0	<2.0	<2.0	<4.0	<5.0	<50	<5.0	<5.0	<5.0	<150	TB-5110-20040224	
	05/25/04			-	-	-	<50	<2.0	<2.0	<2.0	<4.0	<5.0	<50	<5.0	<5.0	<5.0	<150	TB-5110-20040525	
	08/24/04			-	-	-	<50	<2.0	<2.0	<2.0	<4.0	<5.0	<50	<5.0	<5.0	<5.0	<150	TB-5110-20040824	
	11/16/04			-	-	-	<50	<2.0	<2.0	<2.0	<4.0	<5.0	<50	<5.0	<5.0	<5.0	<150	TB-5110-20041116	

### Notes:

GRO = Gasoline range organics

B = Benzene

T = Toluene

E = Ethylbenzene

X = Total xylenes

MTBE = Methyl tert-butyl ether

TBA = Tert-butyl alcohol

DIPE = Di-isopropyl ether

ETBE = Ethyl tert-butyl ether

TAME = Tert-amyl methyl ether

SPH = Separate phase hydrocarbons

TOC = Top of casing (surveyed)

Calc. GW Elev. = Calculated groundwater elevation = TOC - Depth to Water + 0.75\*(Measured SPH Thickness); assuming a specific gravity of 0.75 for SPH

ft-MSL = feet above mean sea level

μg/L = Micrograms per liter

< = Analyte was not detected above the specified method reporting limit

- = Not measured or analyzed

J = Estimated value (less than the method reporting limit and greater than or equal to the method detection limit)

Refer to the reports in which data was first presented for more information on historical data.

GRO analyzed by EPA Method 8015 Modified. The carbon chain range used for analysis since 2002 Quarter 3 is C4-C12.

BTEX and oxygenates analyzed by EPA Method 8260B since 2002 Quarter 3.

A = Alternate analytical method results (used for method comparison studies)

ABN = Well abandoned; no sampling performed

DUP = Duplicate sample

INA = Well inaccessible; not sampled

# TABLE 3 WELL CONSTRUCTION DETAILS ARCO STATION NO. 5110 5731 EAST FIRESTONE BOULEVARD SOUTH GATE, CALIFORNIA

Well Number	Well Installation Date	Well Destruction Date	Casing Diameter (in)	Casing Slot Size (in)	Total Depth (ft bgs)	Screened Intervals (ft bgs)
MW-19	9/20/1989	-	4	0.020	70.3	45-70
MVV-20	9/20/1989	-	4	0.020	69.0	44-69
D-1	6/21/1990	1/24/2002	4	0.020	72.0	7-72
D-2	6/22/1990	1/25/2002	4	0.020	46.9	6.9-46.9
D-3	6/22/1990	-	4	0.020	47.3	7-47
VEW-1	4/6/1995	1/24/2002	2	0.040	50.0	15-25
			2	0.040		30-50
VEW-2	4/7/1995	-	2	0.040	54.0	4-7
			2	0.040		12-29
			2	0.040		34-54
VEW-3	4/8/1995	1/24/2002	2	0.040	50.0	5-11
			2	0.040		15-25
			2	0.040		30-50
VEW-4	4/9/1995	1/25/2002	2	0.040	50.0	5-10
			2	0.040		15-25
			2	0.040		30-50
MW-A1	1998		2	0.020	61.4	NA
MW-A2	1998	-	2	0.020	56.6	NA
MW-A3	12/1/1999	-	4	0.020	65.0	35-65
MW-A4	12/1/1999	<u>-</u>	4	0.020	65.0	35-65
MW-A5	10/21/2001		4	0.020	65.0	30-65
MW-A6	10/30/2001	~	4	0.020	65.0	30-65
MW-A7	4/16/2002	-	2	0.020	65.0	10-30
			4	0.020		35-65
AS/SVE-1	9/30/2003	-	2	0.020	70.0	8-28
			2	0.020		35-55
	****		11	0.020		64-66
AS/SVE-2	10/2/2003	-	2	0.020	70.0	7-27
			2	0.020		35-55
			11	0.020		63-65
AS/SVE-3	10/4/2003	-	2	0.020	70.0	8-28
			2	0.020		35-55
			1	0.020		66-68
AS/SVE-4	9/30/2003	-	2	0.020	70.0	7-27
			2	0.020		34-54
			1	0.020		60-62
AS/SVE-5	9/29/2003		2	0.020	70.0	7-27
			2	0.020		35-55
			1	0.020		64-66

Notes:

- - In Use

NA- Not Available

JARCO Retail/05110/tables SECOR

### TABLE 4 SUMMARY OF WELLS IDENTIFIED WITHIN A ONE-MILE RADIUS ARCO STATION NO. 5110 SOUTHGATE, CALIFORNIA

State Well ID No.	Well ID No.	Usage	Well Operator	Status	Well Location	Distance/Direction From Site (approximate - ft)	Total Depth (ft bgs)	Perforation Intervals (ft bgs)	Well Casing Diam.	Date Last Gauged	Wellhead Elevation (ft AMSL)	Depth to Water (ft bgs)	Groundwater Elevation (ft AMSL)
	"Fire Well"	Ab	AR	Ab	181 f S of RR tracks 400 ft E of LA River 100 ft E of Long Beach Fwy	2,000 ft NW	575	nus.	12				-
03S/12W-05D02	1535H	PS	CSG		160 ft E of Garfield Ave 175 ft N of Southern Ave	1,700 ft S	222		6"	4/3/2003	105.2	57.2	48.0
02S/12W-31Q02	SG-25	PS	CSG	Active	East of Los Angeles Rver and west of Long Beach Freeway	1,800 ft SW	1331	280-350 360-380 400-550	16"			90.0	
03S/12W-06D05	SLY	PS	LTOC		0.1 NW of intersection of Southern Avenue and Garfield	1,800 ft SW		Made					
3S/12W-05C06	NEW1	PS	RD		Luxor St & Mitla Ave	1,900 ft SE		-	E-M				
02S/12W-31Q03	SG-24	PS	CSG	Active	East of Los Angeles Rver and west of Long Beach Freeway	1,900 ft SW	1266	310-390 434-560 570-630	16"			87	
02S/12W-31Q01	1525G		CSG		Southern Ave & Rayo Ave	3,400 ft SW				4/15/2003	102.5	137.0	-34.5
02S/12W-31H02	1524E	Observation	LFCD	-	West of the Los Angeles River & south of Fostoria St	3,400 ft NW	220	195-205		3/19/1990	107.6	72.8	34.8
02S/12W-31Q02	1525H	-	CSG	-	Southern Ave & Burtis St	3,400 ft SW				4/15/2003	102.5	104.0	-1.5
03S/12W-06B03	1525D/SG-23	PS	CSG		150 ft S of Southern Ave 30 ft W of Salt Lake Ave	3,800 ft SW	856	530-624 662-692 772-799	18"	4/15/2003	102.1	103.0	-0.9
02S/12W-33M01	1544G	PS	DWD		Pellet St & Riverson Ave	4,200 ft NE	454	378-415 426-431	16"	5/1/2003	114.5	85.6	28.9
03\$/12W-05M01	1536F	PS	CSG		0.5 Mi N of Imperial 150-200 ft E of Garfield S. of Gate Lee Circle	4,300 ft S	578	50-75 495-595	16"	10/15/2002	98.4	77.9	20.5
02S/12W-03H03	1524F		scwc	200	Wilcox Ave & Santa Ana St	4,800 ft NW				11/28/2000	114.0	98.0	16.0
02S/12W-31M02	SG-7/ 1514A	PS	CSG		300 feet west of Mason St & Nevill Ave	5,100 ft W	883	500-600	16"	4/15/2003	113	97.3	15.6

### TABLE 4

### SUMMARY OF WELLS IDENTIFIED WITHIN A ONE-MILE RADIUS ARCO STATION NO. 5110 SOUTHGATE, CALIFORNIA

State Well ID No.	Well ID No.	Usage	Well Operator	Status	Well Location	Distance/Direction From Site (approximate - ft)	Total Depth (ft bgs)	Perforation Intervals (ft bgs)	Well Casing Diam.	Date Last Gauged	Wellhead Elevation (ft AMSL)	Depth to Water (ft bgs)	Groundwater Elevation (ft AMSL)
02S/12W-29P06	1533A	PS	Private		Jaboneria Rd & Priory St	5,300 ft N		-	****	12/20/1989	116.0	89.4	26.6
02S/12W-29M05	1533M	PS	scwc		100 ft S of Priory St 360 ft W of Eastern Ave	5,300 ft N	650	376-368 380-400 422-425 561-581	16"	10/31/2002	118.0	253.0	-135.0
03S/12W-05A01	Well 20	PS	DWD	-		3,800 ft SE			-				
02S/12W-31B03	Hoffman Well No. 2	PS	scwc			4,600 ft NW							
02S/12W28N03	1543F	PS	scwc		40 ft S of Clara St 400 ft E of Perry Rd Opposite 6447 Clara St	>1 mile NE	352		12"	4/28/2003	120	92.3	27.7
02S/12W-33P02	1555H	PS	USC	~~	Firestone Blvd & Old River SchoolRoad	>1 mile E	180		8"	5/23/2003	113.1	59.2	53.9
03S/12W-06D04	1515L	PS	CSG		1200 ft N of Tweedy Blvd 150 ft W of Walnut	>1 mile W	815	610-620 626-666 678-746	18"	4/15/2003	106.6	106.0	0.6
03S/12W-06D02	1515J	PS	CSG		325 ft W of Pinehurst Ave 850 ft N of Tweedy Blvd.	>1 mile W	813	615-745 767-775	18"	4/15/2003	105.4	112.9	-7.5
03S/12W-04D02	1555J	PS	DWD		0.22 Mi. W of Rives Ave 0.2 Mi E of Old River Rd 100 ft South of Burns Ave	>1 mile E	674	375-412 612-620	16	5/1/2003	113	83.5	29.5

### Legend:

- - Information not available at the time of this report or not available to the public

SCWC - Southern California Water Company

DWD - Downey Water District/City of Downey

CSG - City of Southgate

DCWD - Downey City Water District

RD - Rockview Daries

CLW - City of Lakewood Water Department

PS -Public Supply (groundwater well potentially operated for public use/consumption)

PWC - Park Water Company

LFCD - Los Angeles Flood Control District

LTOC - Lunday-Thagard Oil Company

GW - Groundwter Observation

Ab - Abandoned

AR - ARCO Vinvale Terminal

TABLE 5
SUMMARY OF MONTHLY EFR EVENTS (DISCONTINUED)
ATLANTIC RICHFIELD COMPANY SERVICE STATION NO. 5110
5731 EAST FIRESTONE BOULEVARD
SOUTH GATE, CALIFORNIA

WELL NUMBER	DATE OF PURGE	PURGE VOLUME (gallons)
D-1	07/19/99	850.00
	08/13/99	640.00
	09/08/99	750.00
	10/11/99	900.00
	11/08/99	300.00
	12/06/99	900.00
	01/03/00	560.00
	02/02/00	500.00
	03/06/00	800.00
	04/03/00	600.00
	05/01/00	490.00
	06/02/00	260.00
	07/25/00	580.00
	08/14/00	330.00
	09/14/00	600.00
	10/17/00	300.00
	11/13/00	450.00
	12/14/00	600.00
	01/11/01	500.00
	02/20/01	350.00
	03/22/01	600.00
	04/26/01	510.00
	05/24/01	1,000.00
	06/13/01	550.00
	07/19/01	370.00
	08/24/01	400.00
	09/13/01	165.00
	10/26/01	180.00
	11/21/01	400.00
	12/26/01	337.00
	01/17/02	165.00
	01/25/02	ABN

TABLE 5
SUMMARY OF MONTHLY EFR EVENTS (DISCONTINUED)
ATLANTIC RICHFIELD COMPANY SERVICE STATION NO. 5110
5731 EAST FIRESTONE BOULEVARD

SOUTH GATE, CALIFORNIA

WELL NUMBER	DATE OF PURGE	PURGE VOLUME (gallons)
MW-20	09/13/01 10/26/01 11/21/01 12/26/01 01/17/02	165.00 1.00 300.00 300.00 220.00
MW-A5	DISCONTINUED  01/17/02  DISCONTINUED	220.00 DISCONTINUED
MW-A6	01/17/02 DISCONTINUED	248.00 DISCONTINUED
Total Gallons Rem	oved	17,391.00

Notes:

All measurement in feet above mean sea level.

ABN - Abandoned

### **TABLE 6 - SVE OPERATION REPORT**

## Atlantic Richfield Company Station No. 5110 5731 East Firestone Boulevard South Gate, CA VES SUMMARY OF THE OPERATING PERIOD Fourth Quarter, 2004

Atlantic Richfield Company Engineer:	Ralph Moran
Consultant:	SECOR International Incorporated
Lead Agency:	SCAQMD
Reporting Period:	October 1, 2004 through December 31, 2004
Equipment Inventory:	Paragon Environmental Systems ET-250
	Trailer Mounted
	(1) Ingersol Rand Rotary Screw Compressor
Operating Mode:	Thermal Oxidation
SCAQMD Permit #:	F61746
Influent GRO Concentration at system start up:	System startup 4/7/04
Field observed concentration:	>9,999 ppmv
Laboratory reported concentration:	8,400 ppmv
Influent Benzene Concentration at system start up	p: System startup 4/7/04
Field observed concentration:	not measured
Laboratory reported concentration:	92 ppmv
Influent GRO Concentration at end of period:	
Field observed concentration:	1,438 ppmv (12/16/04)
Laboratory reported concentration:	1,700 ppmv (12/16/04)
Influent Benzene Concentration at end of period:	
Field observed concentration:	not measured
Laboratory reported concentration:	2.2 ppmv (12/16/04)
Flow Rate at end of period:	178 scfm (12/31/04)
Hydrocarbons Removed This Period:	8,953 lb
Utility usage:	
Electricity:	14,397 kWh
Natural Gas:	10,373 Therms
Percent up time during this period:	93% (Vapor Extraction)
Number of auto shut downs during this period:	3 (Vapor Extraction)

Notes:

NA = Not Available

GRO = Gasoline Range Organics (C4 - C12)

5110 SVE Tables 4-04 SECOR

### TABLE 7 - SUMMARY OF SVE OPERATION DATA

## Atlantic Richfield Company Station No. 5110 5731 East Firestone Boulevard South Gate, CA VES OPERATING REPORT Fourth Quarter, 2004

Current Well Source:	SVE-1, SVE-2, SVE-3, SVE-4, SVE-5, MW-A7 (deep zon
GRO Concentration at end of period:	1,700 ppmv (12/16/04)
GRO Concentration at end of last period:	3,500 ppmv (9/23/04)
Initial GRO Concentration:	8,400 ppmv (initial startup 4/7/04)
Benzene Concentration at end of period:	0.98 ppmv (12/16/04)
Benzene Concentration at end of last period:	10 ppmv (9/23/04)
Initial Benzene Concentration:	92 ppmv (initial startup 4/7/04)
CURRENT PROCESS (With Dilution	
GRO Concentration at end of period:	NA
GRO Concentration at end of last period:	NA
Benzene Concentration at end of period:	NA
Benzene Concentration at end of last period:	NA
Initial Benzene Concentration:	22 ppmv (initial startup 4/7/04)
CURRENT PROCESS - EFFL	
CURRENT PROCESS - EFFL GRO Concentration at end of period:	
CURRENT PROCESS - EFFL  GRO Concentration at end of period: GRO Permit Requirement Concentration:	2.2 ppmv (12/16/04) 50 ppmv (as Hexane)
GRO Concentration at end of period: GRO Permit Requirement Concentration: Percent (%) TPH Conversion:	2.2 ppmv (12/16/04) 50 ppmv (as Hexane) 100 %
GRO Concentration at end of period: GRO Permit Requirement Concentration: Percent (%) TPH Conversion: Benzene Concentration at end of period:	2.2 ppmv (12/16/04) 50 ppmv (as Hexane) 100 % 0.029 ppmv (12/16/04)
GRO Concentration at end of period: GRO Permit Requirement Concentration: Percent (%) TPH Conversion: Benzene Concentration at end of period: Benzene Permit Requirement Concentration:	2.2 ppmv (12/16/04) 50 ppmv (as Hexane) 100 % 0.029 ppmv (12/16/04) 0.24 ppmv
GRO Concentration at end of period: GRO Permit Requirement Concentration: Percent (%) TPH Conversion: Benzene Concentration at end of period:	2.2 ppmv (12/16/04) 50 ppmv (as Hexane) 100 % 0.029 ppmv (12/16/04)
GRO Concentration at end of period: GRO Permit Requirement Concentration: Percent (%) TPH Conversion: Benzene Concentration at end of period: Benzene Permit Requirement Concentration: Percent Benzene Conversion:  Cumulative Hydrocarbons removed:	2.2 ppmv (12/16/04) 50 ppmv (as Hexane) 100 % 0.029 ppmv (12/16/04) 0.24 ppmv NA %
GRO Concentration at end of period: GRO Permit Requirement Concentration: Percent (%) TPH Conversion: Benzene Concentration at end of period: Benzene Permit Requirement Concentration: Percent Benzene Conversion:	2.2 ppmv (12/16/04) 50 ppmv (as Hexane) 100 % 0.029 ppmv (12/16/04) 0.24 ppmv NA %  37,369 lb 1513 deg. F
GRO Concentration at end of period: GRO Permit Requirement Concentration: Percent (%) TPH Conversion: Benzene Concentration at end of period: Benzene Permit Requirement Concentration: Percent Benzene Conversion:  Cumulative Hydrocarbons removed:	2.2 ppmv (12/16/04) 50 ppmv (as Hexane) 100 % 0.029 ppmv (12/16/04) 0.24 ppmv NA %  37,369 lb 1513 deg. F 1513 deg. F
GRO Concentration at end of period: GRO Permit Requirement Concentration: Percent (%) TPH Conversion: Benzene Concentration at end of period: Benzene Permit Requirement Concentration: Percent Benzene Conversion:  Cumulative Hydrocarbons removed: Avg. Stack Temperature (Inlet):	2.2 ppmv (12/16/04) 50 ppmv (as Hexane) 100 % 0.029 ppmv (12/16/04) 0.24 ppmv NA %  37,369 lb 1513 deg. F
GRO Concentration at end of period: GRO Permit Requirement Concentration: Percent (%) TPH Conversion: Benzene Concentration at end of period: Benzene Permit Requirement Concentration: Percent Benzene Conversion:  Cumulative Hydrocarbons removed: Avg. Stack Temperature (Inlet):	2.2 ppmv (12/16/04) 50 ppmv (as Hexane) 100 % 0.029 ppmv (12/16/04) 0.24 ppmv NA %  37,369 lb 1513 deg. F 1513 deg. F

NA = Not Applicable NM = Not Measured

GRO = Gasoline Range Organics  $(C_4 - C_{12})$ 

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TABLE 8
Summary of Process Vapor Sampling Results
Atlantic Richfield Company Station No. 5110
5731 East Firestone Boulevard
South Gate, CA

Sample Date	Sample ID	GRO (ppmV)	Benzene (ppmV)	Ethylbenzene (ppmV)	Toluene (ppmV)	Total Xylenes (ppmV)	DIPE (ppmV)	ETBE (ppmV)	MTBE (ppmV)	TAME (ppmV)	TBA (ppmV)	CO2 (%)	CO (%)	CH4 (%)	N2 (%)	O2 (%)
	Influent	8,400	92	38	250	170	<24	<27	<28	<24	<330	10	<0.10	0.32	83	6.6
4/7/2004	Infl. w/ dil.	1,900	22	19	68	96	<6.0	<6.6	7.1	<6.0	<82	1.7	<0.10	<0.10	78	21
	Effluent	3.0	0.19	<0.92	<1.1	<1.8	<2.4	<2.7	<2.8	<2.4	<33	2.5	<0.10	<0.10	78	19
	Influent	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
4/13/2004	Infl. w/ dil.	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Effluent	3.0	<0.059	<0.92	<1.1	<1.8	<2.4	<2.7	<2.8	<2.4	<33	NA	NA	NA	NA	NA
	Influent	6,200	81	52	250	220	<12	<13	27	<12	<160	5.5	<0.10	<0.10	80	14
4/21/2004	Infl. w/ dil.	860	10	9.9	47	51	<2.4	<2.7	4.5	<2.4	<33	0.75	<0.10	<0.10	78	21
	Effluent	3.1	<0.061	<0.92	<1.1	<1.8	<2.4	<2.7	<2.8	<2.4	<33	1.8	<0.10	<0.10	80	18
	Influent	7,000	40	24	180	77	<12	<13	15	<12	<160	5.3	<0.10	0.13	80	15
4/27/2004	Infl. w/ dil.	2,400	21	28	89	120	<2.4	<2.7	8.9	<2.4	<33	1.8	<0.10	<0.10	78	20
	Effluent	3.6	<0.061	<0.92	<1.1	<1.8	<2.4	<2.7	<2.8	<2.4	<33	2.5	<0.10	<0.10	79	18
	Influent	5,900	54	72	290	300	<12	<13	17	<12	<160	3.1	<0.10	<0.10	79	18
5/5/2004	Infl. w/ dil.	1,900	13	18	68	80	<2.4	<2.7	4.2	<2.4	<33	1.0	<0.10	<0.10	79	20
	Effluent	<2.4	<0.060	<0.92	<1.1	<1.8	<2.4	<2.7	<2.8	<2.4	<33	2.1	<0.10	<0.10	80	18
	Influent	4,300	20	15	78	61	<12	<13	7.6	<12	<160	2.7	<0.10	<0.10	79	18
5/12/2004	Infl. w/ dil.	1,500	9.7	14	48	68	<2.4	<2.7	2.9	<2.4	<33	1.0	<0.10	<0.10	79	20
	Effluent	<2.4	0.093	<0.92	<1.1	<1.8	<2.4	<2.7	<2.8	<2.4	<33	2.1	<0.10	<0.10	79	19
	Influent	3,400	30	39	150	180	<12	<13	<14	<12	<160	2.3	<0.10	<0.10	79	19
5/19/2004	Infl. w/ dil.	1,600	13	23	70	120	<4.8	<5.3	<5.6	<4.8	<66	0.92	<0.10	<0.10	79	20
	Effluent	<2.4	0.096	<0.92	<1.1	<1.8	<2.4	<2.7	<2.8	<2.4	<33	2.0	<0.10	<0.10	80	19

TABLE 8
Summary of Process Vapor Sampling Results
Atlantic Richfield Company Station No. 5110
5731 East Firestone Boulevard
South Gate, CA

Sample Date	Sample ID	GRO (ppmV)	Benzene (ppmV)	Ethylbenzene (ppmV)	Toluene (ppmV)	Total Xylenes (ppmV)	DIPE (ppmV)	ETBE (ppmV)	MTBE (ppmV)	TAME (ppmV)	TBA (ppmV)	GO <sub>2</sub> {%}	CO (%)	CH4 (%)	N2 (%)	O2 (%)
	Influent	3,700	28	44	130	210	<2.4	<2.7	6.6	<2.4	<33	2.0	<0.10	<0.10	79	19
6/2/2004	Infl. w/ dil.	1,500	18	36	79	190	<4.8	<5.3	<5.6	<4.8	<66	1.2	<0.10	<0.10	79	20
	Effluent	<2.4	<0.059	<0.92	<1.1	<1.8	<2.4	<2.7	<2.8	<2.4	<33	2.0	<0.10	<0.10	79	19
	Influent	1,600	17	25	96	130	<2.4	<2.7	2.9	<2.4	<33	NA	NA	NA	NA	NA
7/7/2004	Infl. w/ dil.	1,400	12	22	70	120	<2.4	<2.7	<2.8	<2.4	<33	NA	NA	NA	NA	NA
	Effluent	<2.4	<1.2	<0.92	<1.1	<1.8	<2.4	<2.7	<2.8	<2.4	<33	NA	NA	NA	NA	NA
	Influent	1,200	8.3	16	70	86	<4.8	<5.3	<5.6	<4.8	<66	1.2	<0.10	<0.10	79	20
8/4/2004	Infl. w/ dil.	1,200	6.4	15	55	88	<2.4	<2.7	<2.8	<2.4	<33	NA	NA	NA	NA	NA
	Effluent	<2.4	0.082	<0.92	<1.1	<1.8	<2.4	<2.7	<2.8	<2.4	<33	NA	NA	NA	NA	NA
9/9/2004	Influent	900	4.1	13	46	72	<2.4	<2.7	<2.8	<2.4	<33	1.3	<0.10	<0.10	79	20
3/3/2004	Effluent	<2.4	<0.059	<0.92	<1.1	<1.8	<2.4	<2.7	<2.8	<2.4	<33	NA	NA	NA	NA	NA
9/23/2004	Influent	3,500	10	15	14	75	<2.4	<2.7	7.1	<2.4	<33	6.9	<0.10	<0.10	86	7.4
10/7/2004	Influent	1,500	2.1	3.0	9.7	24	<2.4	<2.7	<2.8	<2.4	<33	4.7	<0.10	<0.10	83	12
10/1/2004	Effluent	<2.4	<0.059	<0.92	<1.1	<1.8	<2.4	<2.7	<2.8	<2.4	<33	3.2	<0.10	<0.10	80	16
11/4/2004	Influent	1,800	<1.2	1.6	6.2	13	<2.4	<2.7	<2.8	<2.4	<33	NA	NA	NA	NA	NA
11/4/2004	Effluent	<2.4	0.062	<0.92	<1.1	<1.8	<2.4	<2.7	<2.8	<2.4	<33	NA	NA	NA	NA	NA
12/16/2004	Influent	1,700	0.98	2.0	7.0	17	<0.4	<0.4	<0.4	<0.4	<2.0	4.4	<0.001	0.23	15	83
12/10/2004	Effluent	2.2	0.029	0.015	0.033	0.12	<0.002	<0.002	<0.002	<0.002	<0.01	2.9	0.017	0.0074	18	82

Notes:

GRO = Gasoline Range Organics (C<sub>4</sub> - C<sub>12</sub>)

MTBE = Methyl Tertiary Butyl Ether
ppmV = Parts per million on a volume basis

NS = Not sampled NA = Not analyzed GRO analyzed using EPA Mehod 8015 Modified BTEX and Oxygenates analyzed using EPA Method 8260B

Effluent Benzene analyzed using EPA Method 410A Modified

Fixed Gases analyzed using ASTM D1946-90

### TABLE 9

### Summary of Individual Well Vapor Sample Analytical Results Atlantic Richfield Company Station No. 5110 5731 East Firestone Boulevard South Gate, CA

Sample Date	Sample ID	GRO (ppmV)	Benzene (ppmV)	Ethylbenzene (ppmV)	Toluene (ppmV)	Total Xylenes (ppmV)	DIPE (ppmV)	ETBE (ppmV)	MTBE (ppmV)	TAME (ppmV)	TBA (ppmV)	CO <sub>2</sub> (%)	Methane (%)	O <sub>2</sub> (%)
4/7/2004	SVE-1 Shallow	11,000	120	100	320	470	<12	<13	23	<12	<160	11	0.48	<5.5
4/7/2004	SVE-1 Deep	10,000	100	100	280	510	<12	<13	43	<12	<160	11	0.53	<5.5
4/7/2004	SVE-2 Shallow	14,000	150	88	360	470	<12	<13	72	<12	<160	12	0.81	<5.5
4/7/2004	SVE-2 Deep	14,000	130	92	350	500	<12	<13	67	<12	<160	12	0.66	<5.5
4/7/2004	SVE-3 Shallow	14,000	270	130	420	570	<24	<27	<28	<24	<330	12	0.79	<5.5
4/7/2004	SVE-3 Deep	13,000	250	130	440	610	<24	<27	46	<24	<330	12	0.68	<5.5
4/7/2004	SVE-4 Shallow	5,900	38	45	190	210	<12	<13	<14	<12	<160	9.8	0.24	7.5
4/7/2004	SVE-4 Deep	8,500	82	46	340	200	<24	<27	<28	<24	<330	12	0.19	<5.5
4/7/2004	SVE-5 Shallow	5,100	11	15	3	31	<2.4	<2.7	<2.8	<2.4	<33	7.3	0.42	9.3
4/7/2004	SVE-5 Deep	13,000	15	9.8	2.8	22	<6.0	<6.6	<7.0	<6.0	<82	6.4	1.1	9.2
4/7/2004	MW-A7	5,200	25	31	120	230	<6.0	<6.6	13	<6.0	<82	0.1	<0.1	23

Notes:

GRO = Gasoline Range Organics ( $C_4$  -  $C_{12}$ )

MTBE = Methyl Tertiary Butyl Ether

ppmV = Parts per million on a volume basis

NS = Not sampled

NA = Not analyzed

GRO analyzed using EPA Mehod 8015 Modified

BTEX and Oxygenates analyzed using EPA Method 8260B Effluent Benzene analyzed using EPA Method 410A Modified

Fixed Gases analyzed using ASTM D1946-90

# TABLE 10 Individual Soil Vapor Extraction Well Field Monitoring Data Atlantic Richfield Company Station No. 5110 5731 East Firestone Boulevard South Gate, CA Initial Start-up Date 4/7/04

Well Number	Monitoring Date	Voc	Vapor Well	Vacuum at	Well
(Slotted Interval)		Concentration	Flow Rate	Flow Potential	Status
(Start-up H.C. ppmv)		(ppmv)	(scfm)	(in. w.c.)	
SVE-1 Shallow	10/07/04				OFF-LINE
	10/14/04				OFF-LINE
	10/21/04				OFF-LINE
	10/28/04				OFF-LINE
(8 TO 28)	11/04/04				OFF-LINE
,	11/12/04				OFF-LINE
(11,000)*	11/18/04				OFF-LINE
( , )	11/23/04				OFF-LINE
	12/02/04				OFF-LINE
	12/09/04				OFF-LINE
	12/16/04		an va		OFF-LINE
	12/23/04		<u></u>		OFF-LINE
	12/30/04				OFF-LINE
SVE-1 Deep	10/07/04	121		50	ON-LINE
SVL-1 Deep	10/14/04	1,798		53	ON-LINE
	10/21/04	495		47	ON-LINE
	10/28/04	72		60	ON-LINE
(35 TO 55)	11/04/04	94		60	
(35 TO 55)	1	97			ON-LINE
(40.000)*	11/12/04			62 64	ON-LINE
(10,000)*	11/18/04	108			ON-LINE
	11/23/04	122		48	ON-LINE
	12/02/04	97		46	ON-LINE
	12/09/04	86	***	62	ON-LINE
	12/16/04	97		63	ON-LINE
	12/23/04	89		61	ON-LINE
	12/30/04	123		61	ON-LINE
SVE-2 Shallow	10/07/04				OFF-LINE
	10/14/04				OFF-LINE
	10/21/04				OFF-LINE
	10/28/04				OFF-LINE
(7 TO 27)	11/04/04				OFF-LINE
	11/12/04				OFF-LINE
(14,000)*	11/18/04				OFF-LINE
	11/23/04				OFF-LINE
	12/02/04		Marcan.		OFF-LINE
	12/09/04				OFF-LINE
	12/16/04				OFF-LINE
	12/23/04				OFF-LINE
	12/30/04				OFF-LINE
SVE-2 Deep	10/07/04	1,822		50	ON-LINE
	10/14/04	1,621		53	ON-LINE
	10/21/04	3,525		47	ON-LINE
	10/28/04	3,537		60	ON-LINE
(35 TO 55)	11/04/04	1,587		60	ON-LINE
` ,	11/12/04	3,814		62	ON-LINE
(14,000)*	11/18/04	1,496		64	ON-LINE
(· · · i = )	11/23/04	4,613		48	ON-LINE
	12/02/04	2,418		46	ON-LINE
	12/09/04	1,998		62	ON-LINE
	12/16/04	2,133	-	63	ON-LINE
	12/10/04	1,984		61	ON-LINE
				61	
	12/30/04	1,981		U 01	ON-LINE

# TABLE 10 Individual Soil Vapor Extraction Well Field Monitoring Data Atlantic Richfield Company Station No. 5110 5731 East Firestone Boulevard South Gate, CA Initial Start-up Date 4/7/04

Well Number	Monitoring Date	Voc	Vapor Well	Vacuum at	Well
(Slotted Interval)		Concentration	Flow Rate	Flow Potential	Status
(Start-up H.C. ppmv)		(ppmv)	(scfm)	(in. w.c.)	
SVE-3 Shallow	10/07/04				OFF-LINE
	10/14/04				OFF-LINE
	10/21/04				OFF-LINE
	10/28/04				OFF-LINE
(8 TO 28)	11/04/04				OFF-LINE
, ,	11/12/04				OFF-LINE
(14,000)*	11/18/04				OFF-LINE
( - 1, 7)	11/23/04				OFF-LINE
	12/02/04		***		OFF-LINE
	12/09/04				OFF-LINE
	12/16/04				OFF-LINE
	12/23/04				OFF-LINE
	12/30/04				OFF-LINE
SVE-3 Deep	10/07/04	2,832		50	ON-LINE
0.2000	10/14/04	2,049		53	ON-LINE
	10/21/04	3,189		47	ON-LINE
	10/28/04	12		60	ON-LINE
(35 TO 55)	11/04/04	245		60	ON-LINE
(00 1 0 00)	11/12/04	22		62	ON-LINE
(13,000)*	11/18/04	271		64	ON-LINE
(13,000)	11/23/04	89		48	ON-LINE
	12/02/04	89		46	ON-LINE
	12/09/04	92		62	ON-LINE
	12/16/04	94		63	ON-LINE
	12/10/04	101		61	ON-LINE
	12/30/04	101		61	ON-LINE
SVE-4 Shallow	10/07/04				OFF-LINE
OVE-4 Challow	10/14/04				OFF-LINE
	10/21/04		<del></del>		OFF-LINE
	10/28/04				OFF-LINE
(7 TO 27)	11/04/04				OFF-LINE
(11021)	11/12/04				OFF-LINE
(5,900)*	11/18/04				OFF-LINE
(5,900)	11/23/04		**		OFF-LINE
	12/02/04				OFF-LINE
	12/02/04				OFF-LINE
	12/09/04				OFF-LINE OFF-LINE
	12/10/04				OFF-LINE OFF-LINE
	12/30/04				OFF-LINE
SVE-4 Deep	10/07/04	1,773		50	ON-LINE
3vc-4 Deep	10/14/04	944		53	ON-LINE ON-LINE
	10/14/04	829		47	ON-LINE ON-LINE
	10/21/04	10	-	60	ON-LINE ON-LINE
(34 TO 54)	11/04/04	28		60	ON-LINE ON-LINE
(34 10 34)	11/12/04	20 21		62	
(9 E00)*	j .			64	ON-LINE
(8,500)*	11/18/04	35		48	ON-LINE
	11/23/04	219			ON-LINE
	12/02/04	123		46	ON-LINE
	12/09/04	96		62	ON-LINE
	12/16/04	82		63	ON-LINE
	12/23/04	96		61	ON-LINE
	12/30/04	74		61	ON-LINE

### TABLE 10 Individual Soil Vapor Extraction Well Field Monitoring Data Atlantic Richfield Company Station No. 5110 5731 East Firestone Boulevard South Gate, CA

Initial Start-up Date 4/7/04

Well Number	Monitoring Date	Voc	Vapor Well	Vacuum at	Well
(Slotted Interval)		Concentration	Flow Rate	Flow Potential	Status
(Start-up H.C. ppmv)		(ppmv)	(scfm)	(in. w.c.)	
SVE-5 Shallow	10/07/04				OFF-LINE
SVE-S Shallow	10/14/04				OFF-LINE
	10/21/04				OFF-LINE
	10/28/04				OFF-LINE
(7 TO 27)	11/04/04				OFF-LINE
(1021)	11/12/04				OFF-LINE
(5,100)*	11/18/04				OFF-LINE
(0,100)	11/23/04	_			OFF-LINE
	12/02/04				OFF-LINE
	12/09/04				OFF-LINE
	12/16/04				OFF-LINE
	12/23/04				OFF-LINE
	12/30/04				OFF-LINE
SVE-5 Deep	10/07/04	736		50	ON-LINE
0.2020	10/14/04	183		53	ON-LINE
	10/21/04	244		47	ON-LINE
	10/28/04	4		60	ON-LINE
(35 TO 55)	11/04/04	57		60	ON-LINE
()	11/12/04	17		62	ON-LINE
(13,000)*	11/18/04	67		64	ON-LINE
(,,	11/23/04	186	**	48	ON-LINE
	12/02/04	201		46	ON-LINE
	12/09/04	203		62	ON-LINE
	12/16/04	76		63	ON-LINE
	12/23/04	68		61	ON-LINE
	12/30/04	70		61	ON-LINE
MW-A7 Shallow	10/07/04	1,372		50	ON-LINE
	10/14/04	841		53	ON-LINE
	10/21/04	1,284		47	ON-LINE
	10/28/04	88		60	ON-LINE
(10 TO 30)	11/04/04	146		60	ON-LINE
	11/12/04	74		62	ON-LINE
(5,200)*	11/18/04	152	**	64	ON-LINE
	11/23/04	1,204		48	ON-LINE
	12/02/04	906		46	ON-LINE
	12/09/04	409		62	ON-LINE
	12/16/04	804		63	ON-LINE
	12/23/04	771		61	ON-LINE
	12/30/04	789		61	ON-LINE
MW-A7 Deep	10/07/04				OFF-LINE
	10/14/04				OFF-LINE
	10/21/04				OFF-LINE
(35 TO 65)	10/28/04				OFF-LINE
	11/04/04				OFF-LINE
()*	11/12/04		nn.		OFF-LINE
	11/18/04			-	OFF-LINE
	11/23/04				OFF-LINE
	12/02/04			-	OFF-LINE
	12/09/04				OFF-LINE
	12/16/04				OFF-LINE
	12/23/04				OFF-LINE
	12/30/04				OFF-LINE

-- = not measured

VOC = Volatile Organic Compounds
\* = GRO from Laboratory analytical samples taken on start-up

# TABLE 11 Individual Air Sparge Well Monitoring Data Atlantic Richfield Company Station No. 5110 5731 East Firestone Boulevard South Gate, CA Initial Start-Up Date 4/7/04

Well Number	Monitoring Date	Injection Flow Rate (scfh)	Injection Pressure (psi)
AS-1	Off Line	Off Line	Off Line
AS-2	Off Line	Off Line	Off Line
AS-3	Off Line	Off Line	Off Line
AS-4	Off Line	Off Line	Off Line
AS-5	Off Line	Off Line	Off Line

<sup>--</sup> Not measured.

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TABLE 12a

### DAILY OPERATIONAL LOG

### ATLANTIC RICHFIELD COMPANY STATION No .5110 SYSTEM START-UP DATE: 4/7/04

OCTOBER, 2004

									ODLIC, 2004								
DATE	DATA SOURCE	NOTES	LAB INF. CONC. SOURCE (PPMV)	LAB INF. CONC. W/ DIL. (PPMV)	LAB EFFLUENT CONC. (PPMV)	FIELD INF CONC. SOURCE (PPMV)	FIELD INF. CONC. W/ DIL. (PPMV)	FELD EFFLUENT CONC. (PPMV)	DILUTION VALVE OPEN (%)	GRO CONV. (%)	SOURCE FLOW (SCFM)	PROCESS FLOW (SCFM)	MANIFOLD VACUUM (IN H2O)	COMBUST- ION TEMP (DEG F)	EFFLUENT TEMP. (DEG F)	CUMULATIVE HC REMOVED (LB)	HOURS ON- LINE
10/01/04	*					2,079	2,079	2.7	0.0	99.9	172	172	52	1,511	1,511	28,612	24.0
10/02/04	*	1				2,079	2,079	2.7	0.0	99.9	172	172	52	1,511	1,511	28,809	24.0
10/03/04	*					2,079	2,079	2.7	0.0	99.9	172	172	52	1,511	1,511	29,006	24.0
10/04/04	*					2,079	2,079	2.7	0.0	99.9	172	172	52	1,511	1,511	29,203	24.0
10/05/04	*					2,079	2,079	2.7	0.0	99.9	172	172	52	1,511	1,511	29,399	24.0
10/06/04	*					2,079	2,079	2.7	0.0	99.9	172	172	52	1,511	1,511	29,596	24.0
10/07/04	TECH	1	1,500	NA	<2.4	2,216	2,216	11.8	0.0	99.8	159	159	50	1,511	1,511	29,674	24.0
10/08/04	*	ļ				2,216	2,216	11.8	0.0	99.8	159	159	50	1,511	1,511	29,752	24.0
10/09/04	*					2,216	2,216	11.8	0.0	99.8	159	159	50	1,511	1,511	29,830	24.0
10/10/04	*					2,216	2,216	11.8	0.0	99.8	159	159	50	1,511	1,511	29,908	24.0
10/11/04	*					2,216	2,216	11.8	0.0	99.8	159	159	50	1,511	1,511	29,986	24.0
10/12/04	*					2,216	2,216	11.8	0.0	99.8	159	159	50	1,511	1,511	30,064	24.0
10/13/04	*					2,216	2,216	11.8	0.0	99.8	159	159	50	1,511	1,511	30,141	24.0
10/14/04	TECH					1,679	1,679	3.9	0.0	99.8	169	169	53	1,518	1,515	30,224	23.9
10/15/04	*					1,679	1,679	3.9	0.0	99.8	169	169	53	1,518	1,515	30,307	24.0
10/16/04	*					1,679	1,679	3.9	0.0	99.8	169	169	53	1,518	1,515	30,390	24.0
10/17/04	*					1,679	1,679	3.9	0.0	99.8	169	169	53	1,518	1,515	30,472	24.0
10/18/04	*					1,679	1,679	3.9	0.0	99.8	169	169	53	1,518	1,515	30,555	24.0
10/19/04	*	T				1,679	1,679	3.9	0.0	99.8	169	169	53	1,518	1,515	30,638	24.0
10/20/04	*					1,679	1,679	3.9	0.0	99.8	169	169	53	1,518	1,515	30,646	2.2
10/21/04	TECH	2				2,249	2,249	1.3	0.0	99.8	176	176	47	1,505	1,507	30,700	15.0
10/22/04	*					2,249	2,249	1.3	0.0	99.8	176	176	47	1,505	1,507	30,786	24.0
10/23/04	*					2,249	2,249	1.3	0.0	99.8	176	176	47	1,505	1,507	30,872	24.0
10/24/04	*					2,249	2,249	1.3	0.0	99.8	176	176	47	1,505	1,507	30,958	24.0
10/25/04	*					2,249	2,249	1.3	0.0	99.8	176	176	47	1,505	1,507	31,045	24.0
10/26/04	*					2,249	2,249	1.3	0.0	99.8	176	176	47	1,505	1,507	31,131	24.0
10/27/04	*					2,249	2,249	1.3	0.0	99.8	176	176	47	1,505	1,507	31,217	24.0
10/28/04	TECH	3				30	30	20.7	0.0	99.8	172	172	60	1,513	1,513	31,301	24.0
10/29/04	*					30	30	20.7	0.0	99.8	172	172	60	1,513	1,513	31,386	24.0
10/30/04	*					30	30	20.7	0.0	99.8	172	172	60	1,513	1,513	31,470	24.0
10/31/04	*					30	30	20.7	0.0	99.8	172	172	60	1,513	1,513	31,554	24.0

TOTAL POUNDS OF HYDROCARBONS REMOVED SINCE INITIAL START UP	31,554
TOTAL POUNDS OF HYDROCARBONS REMOVED DURNG OCTOBER, 2004	3,139
TOTAL HOURS ON-LINE DURING OCTOBER, 2004	713

3 - LOW CONCENTRATION ANOMALY

Notes: 1 - Certified sampling 2 - System was off upon arrival due to FSC fault.

TECH - Technician performed O&M on this data \*- Data extrapolated NA - Not Applicable

GRO - Gasoline Range Organics

TABLE 12b

### DAILY OPERATIONAL LOG

### ATLANTIC RICHFIELD COMPANY STATION No .5110 SYSTEM START-UP DATE: 4/7/04

### NOVEMBER 2004

								NOV	EMBER, 2004								
DATE	DATA SOURCE	NOTES	LAB INF CONC. SOURCE (PPMV)	LAB INF. CONC. W/ DIL. (PPMV)	LAB EFFLUENT CONC (PPMV)	FIELD INF CONC. SOURCE (PPMV)	FIELD INF. CONC. W/ DIL. (PPMV)	FIELD EFFLUENT CONC. (PPMV)	DILUTION VALVE OPEN (%6)	GRO CONV. (%)	SOURCE FLOW (SCFM)	PROCESS FLOW (SCFM)	MANIFOLD VACUUM (IN H2O)	COMBUST- ION TEMP (DEG F)	EFFLUENT TEMP (DEG F)	CUMULATIVE HC REMOVED (LB)	HOURS ON- LINE
11/01/04	*					30	30	20.7	0.0	99.8	172	172	60	1,513	1,513	31,639	24.0
11/02/04	*					30	30	20.7	0.0	99.8	172	172	60	1,513	1,513	31,723	24.0
11/03/04	*					30	30	20.7	0.0	99.8	172	172	60	1,513	1,513	31,807	24.0
11/04/04	TECH	1	1,800	NA	<2.4	643	643	4.5	0.0	99.9	174	174	60	1,513	1,513	31,910	24.0
11/05/04	*					643	643	4.5	0.0	99.9	174	174	60	1,513	1,513	32,012	24.0
11/06/04	*					643	643	4.5	0.0	99.9	174	174	60	1,513	1,513	32,114	24.0
11/07/04	*					643	643	4.5	0.0	99.9	174	174	60	1,513	1,513	32,217	24.0
11/08/04	*					643	643	4.5	0.0	99.9	174	174	60	1,513	1,513	32,319	24.0
11/09/04	*					643	643	4.5	0.0	99.9	174	174	60	1,513	1,513	32,421	24.0
11/10/04	*					643	643	4.5	0.0	99.9	174	174	60	1,513	1,513	32,524	24.0
11/11/04	s e					643	643	4.5	0.0	99.9	174	174	60	1,513	1,513	32,626	24.0
11/12/04	TECH					3,138	3,138	3.8	0.0	99.9	177	177	62	1,508	1,508	32,730	24.0
11/13/04	*					3,138	3,138	3.8	0.0	99.9	177	177	62	1,508	1,508	32,834	24.0
11/14/04	*					3,138	3,138	3.8	0.0	99.9	177	177	62	1,508	1,508	32,938	24.0
11/15/04	*					3,138	3,138	3.8	0.0	99.9	177	177	62	1,508	1,508	33,042	24.0
11/16/04	*					3,138	3,138	3.8	0.0	99.9	177	177	62	1,508	1,508	33,147	24.0
11/17/04	*					3,138	3,138	3.8	0.0	99.9	177	177	62	1,508	1,508	33,148	0.3
11/18/04	TECH					623	623	2.2	0.0	99.9	168	168	64	1,524	1,524	33,201	13.0
11/19/04	*					623	623	2.2	0.0	99.9	168	168	64	1,524	1,524	33,300	24.0
11/20/04	*					623	623	2.2	0.0	99.9	168	168	64	1,524	1,524	33,399	24.0
11/21/04	*					623	623	2.2	0.0	99.9	168	168	64	1,524	1,524	33,498	24.0
11/22/04	*					623	623	2.2	0.0	99.9	168	168	64	1,524	1,524	33,531	8.1
11/23/04	TECH	2				4,879	4,879	6.1	0.0	99.9	193	193	48	1,519	1,519	33,616	18.0
11/24/04	*					4,879	4,879	6.1	0.0	99.9	193	193	48	1,519	1,519	33,730	24.0
11/25/04	*					4,879	4,879	6.1	0.0	99.9	193	193	48	1,519	1,519	33,843	24.0
11/26/04	*					4,879	4,879	6.1	0.0	99.9	193	193	48	1,519	1,519	33,957	24.0
11/27/04	*					4,879	4,879	6.1	0.0	99.9	193	193	48	1,519	1,519	34,070	24.0
11/28/04	1/c					4,879	4,879	6.1	0.0	99.9	193	193	48	1,519	1,519	34,184	24.0
11/29/04	*					4,879	4,879	6.1	0.0	99.9	193	193	48	1,519	1,519	34,297	24.0
11/30/04	*					4,879	4,879	6.1	0.0	99.9	193	193	48	1,519	1,519	34,353	11.8

TOTAL POUNDS OF HYDROCARBONS REMOVED SINCE INITIAL START UP	34,353
TOTAL POUNDS OF HYDROCARBONS REMOVED DURNG NOVEMBER, 2004	2,799
TOTAL HOURS ON-LINE DURING NOVEMBER, 2004	651

Notes: 1 - Certified sampling. 2 - System shut down automatically due to high temperature failure

TECH - Technician performed O&M on this date \* - Data extrapolated NA - Not Applicable

GRO - Gasoline Range Organics

5110 SVE Tables 4-04 SECOR

TABLE 12c

### DAILY OPERATIONAL LOG

### ATLANTIC RICHFIELD COMPANY STATION No .5110 SYSTEM START-UP DATE: 4/7/04

### DECEMBER 2004

								DEC	EMBER, 2004								
DATE	DATA SOURCE	NOTES	LAB INF. CONC. SOURCE (PPMV)	LAB INF. CONC. W/ DIL. (PPMV)	LAB EFFLUENT CONC (PPMV)	FIELD INF CONC. SOURCE (PPMV)	FIELD INF. CONC. W/ DIL. (PPMV)	FIELD EFFLUENT CONC. (PPMV)	DILUTION VALVE OPEN (%)	GRO CONV. (%)	SOURCE FLOW (SCFM)	PROCESS FLOW (SCFM)	MANIFOLD VACUUM (IN H2O)	COMBUST- ION TEMP (DEG F)	EFFLUENT TEMP (DEG F)	CUMULATIVE HC REMOVED (LB)	HOURS ON- LINE
12/01/04	*					4,879	4,879	6.1	0.0	99.9	193	193	48	1,519	1,519	34,353	0.0
12/02/04	TECH					822	822	1.1	0.0	99.9	193	193	46	1,518	1,518	34,424	15.0
12/03/04	*					822	822	1.1	0.0	99.9	193	193	46	1,518	1,518	34,538	24.0
12/04/04	*					822	822	1.1	0.0	99.9	193	193	46	1,518	1,518	34,651	24.0
12/05/04	*					822	822	1.1	0.0	99.9	193	193	46	1,518	1,518	34,765	24.0
12/06/04	*					822	822	1.1	0.0	99.9	193	193	46	1,518	1,518	34,878	24.0
12/07/04	*					822	822	1.1	0.0	99.9	193	193	46	1,518	1,518	34,992	24.0
12/08/04	*					822	822	1.1	0.0	99.9	193	193	46	1,518	1,518	35,105	24.0
12/09/04	TECH	(1)				364	364	7.3	0.0	99.9	180	180	62	1,506	1,507	35,211	24.0
12/10/04	*					364	364	7.3	0.0	99.9	180	180	62	1,506	1,507	35,317	24.0
12/11/04	*					364	364	7.3	0.0	99.9	180	180	62	1,506	1,507	35,423	24.0
12/12/04	*					364	364	7.3	0.0	99.9	180	180	62	1,506	1,507	35,529	24.0
12/13/04	*					364	364	7.3	0.0	99.9	180	180	62	1,506	1,507	35,635	24.0
12/14/04	*					364	364	7.3	0.0	99.9	180	180	62	1,506	1,507	35,740	24.0
12/15/04	*					364	364	7.3	0.0	99.9	180	180	62	1,506	1,507	35,846	24.0
12/16/04	TECH	(1)	1,700	NA	2.2	1,438	1,438	8.5	0.0	99.9	176	176	63	1,511	1,511	35,944	23.9
12/17/04	H					1,438	1,438	8.5	0.0	99.9	176	176	63	1,511	1,511	36,041	24.0
12/18/04	*					1,438	1,438	8.5	0.0	99.9	176	176	63	1,511	1,511	36,139	24.0
12/19/04	H					1,438	1,438	8.5	0.0	99.9	176	176	63	1,511	1,511	36,237	24.0
12/20/04	*					1,438	1,438	8.5	0.0	99.9	176	176	63	1,511	1,511	36,335	24.0
12/21/04	*					1,438	1,438	8.5	0.0	99.9	176	176	63	1,511	1,511	36,432	24.0
12/22/04	×					1,438	1,438	8.5	0.0	99.9	176	176	63	1,511	1,511	36,530	24.0
12/23/04	TECH			1		1,206	1,206	6.9	0.0	99.9	197	197	61	1,512	1,512	36,636	23.3
12/24/04	*					1,206	1,206	6.9	0.0	99.9	197	197	61	1,512	1,512	36,746	24.0
12/25/04	*					1,206	1,206	6.9	0.0	99.9	197	197	61	1,512	1,512	36,855	24.0
12/26/04	*					1,206	1,206	6.9	0.0	99.9	197	197	61	1,512	1,512	36,965	24.0
12/27/04	*					1,206	1,206	6.9	0.0	99.9	197	197	61	1,512	1,512	37,074	24.0
12/28/04	*					1,206	1,206	6.9	0.0	99.9	197	197	61	1,512	1,512	37,184	24.0
12/29/04	*					1,206	1,206	6.9	0.0	99.9	197	197	61	1,512	1,512	37,195	2.6
12/30/04	TECH	(2)				1,323	1,323	6.9	0.0	99.9	178	178	61	1,515	1,511	37,270	18.0
12/31/04	*					1,323	1,323	6.9	0.0	99.9	178	178	61	1,515	1,511	37,369	24.0

TOTAL POUNDS OF HYDROCARBONS REMOVED SINCE INITIAL START UP	37,369
TOTAL POUNDS OF HYDROCARBONS REMOVED DURNG DECEMBER, 2004	3,015
TOTAL HOURS ON-LINE DURING DECEMBER, 2004	683

Notes:
1 - Certified sampling.
2 - System shut down automatically due to wet flame rod assembly. Restarted system

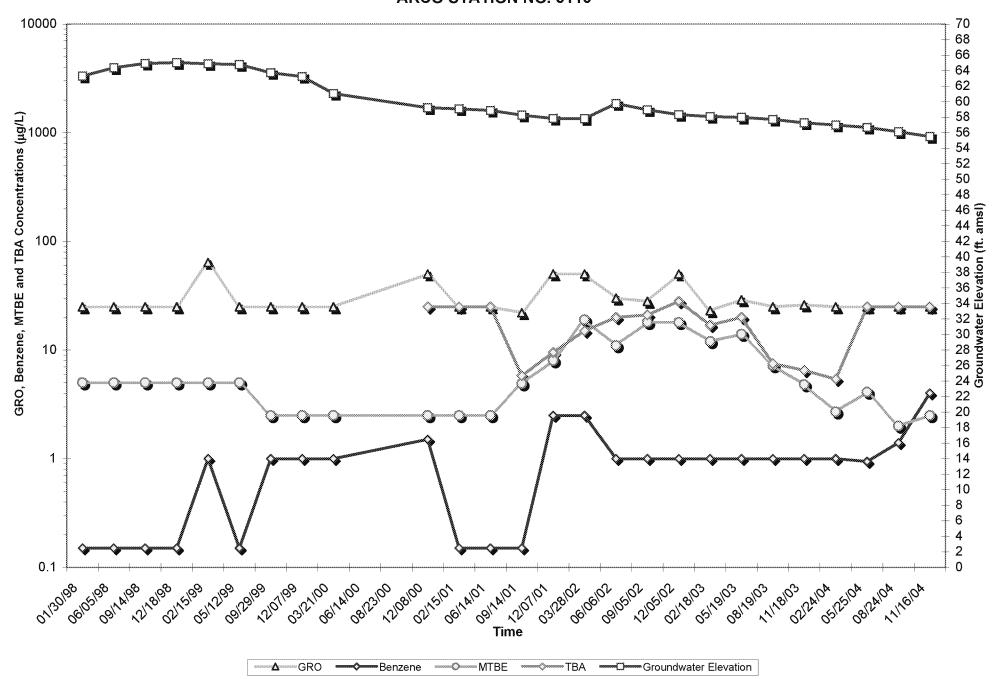
TECH - Technician performed O&M on this data \*- Data extrapolated NA - Not Applicable

GRO - Gasoline Range Organics

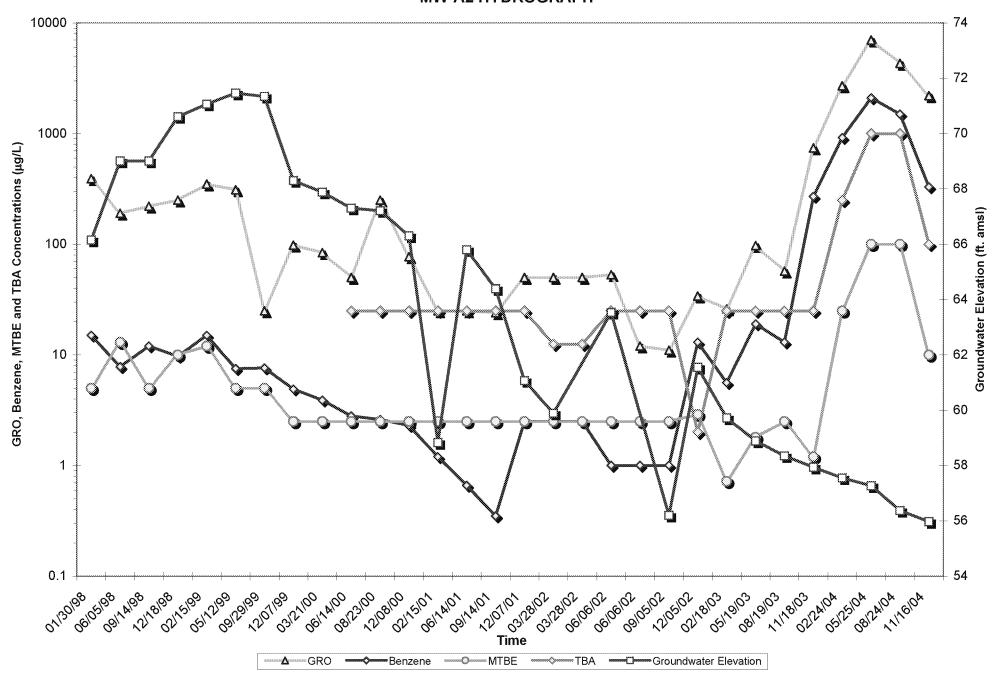
5110 SVE Tables 4-04 SECOR

**GRAPHS** 

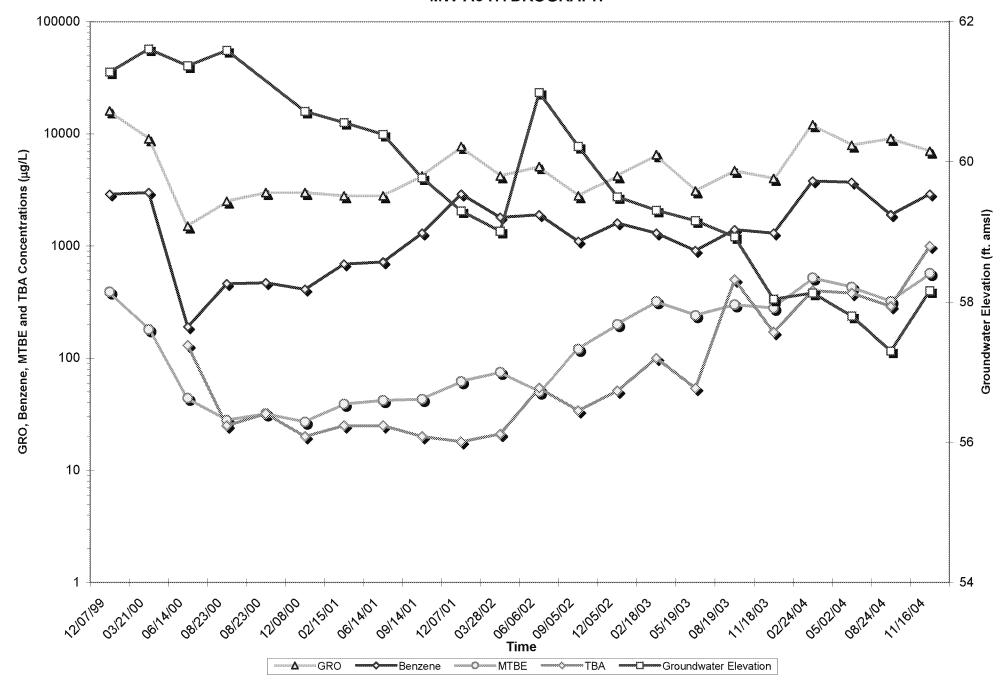
GRAPH 1 MW-A1 HYDROGRAPH ARCO STATION NO. 5110



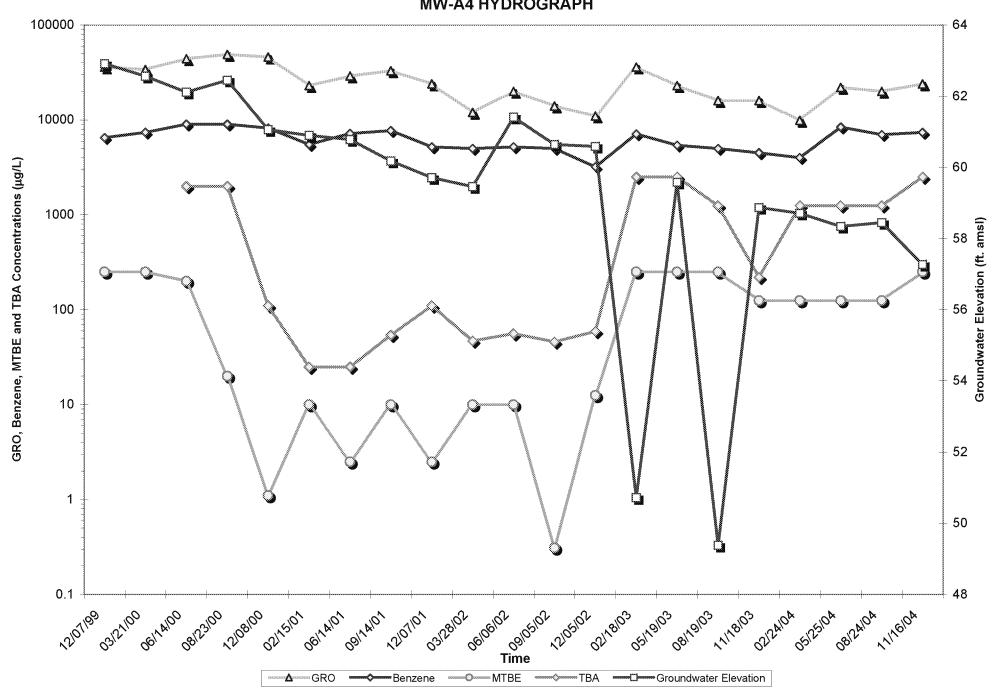
GRAPH 2 ARCO STATION NO. 5110 MW-A2 HYDROGRAPH



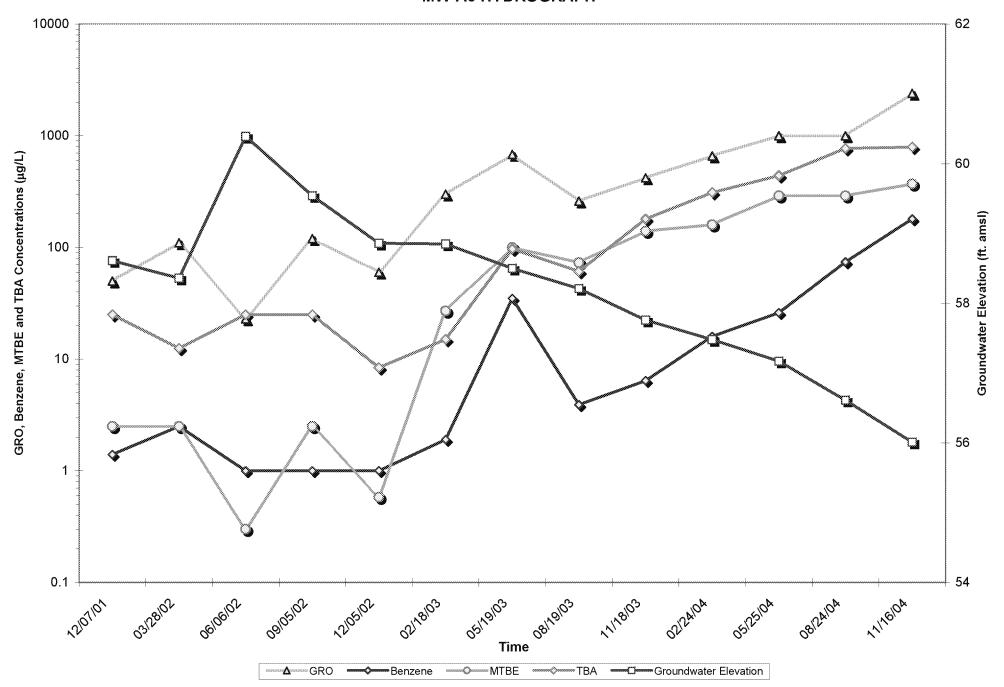
GRAPH 3 ARCO STATION NO. 5110 MW-A3 HYDROGRAPH



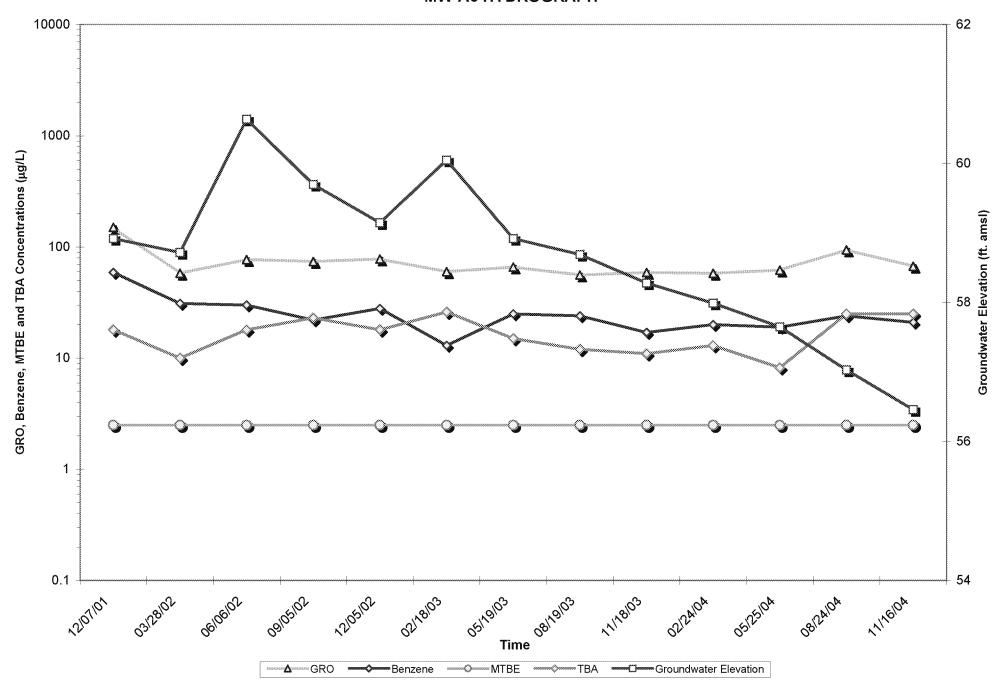
GRAPH 4
ARCO STATION NO. 5110
MW-A4 HYDROGRAPH



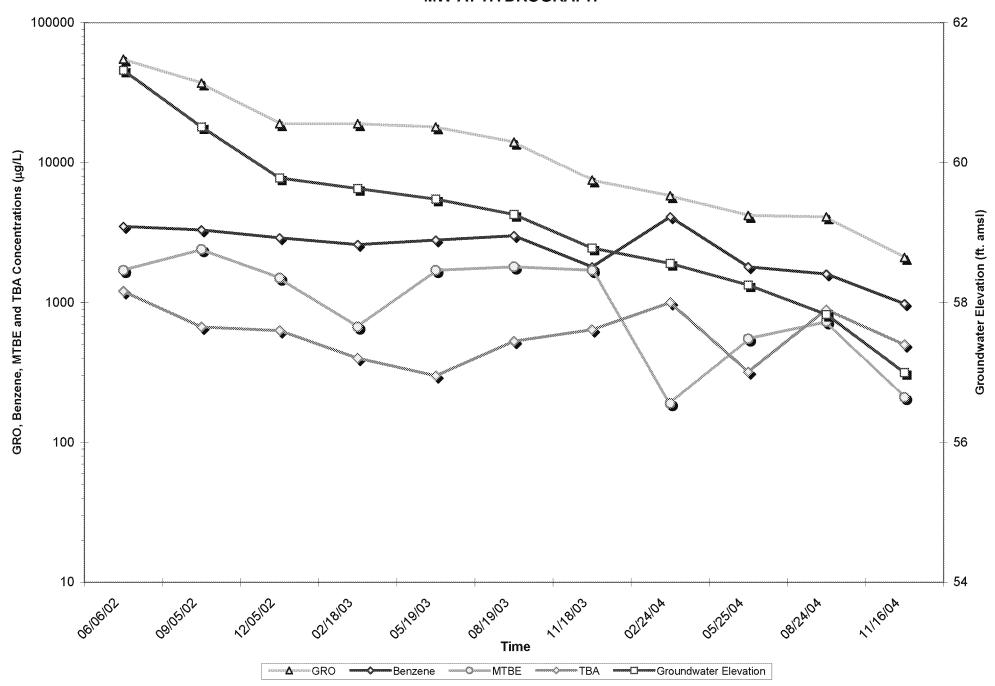
GRAPH 5 ARCO STATION NO. 5110 MW-A5 HYDROGRAPH



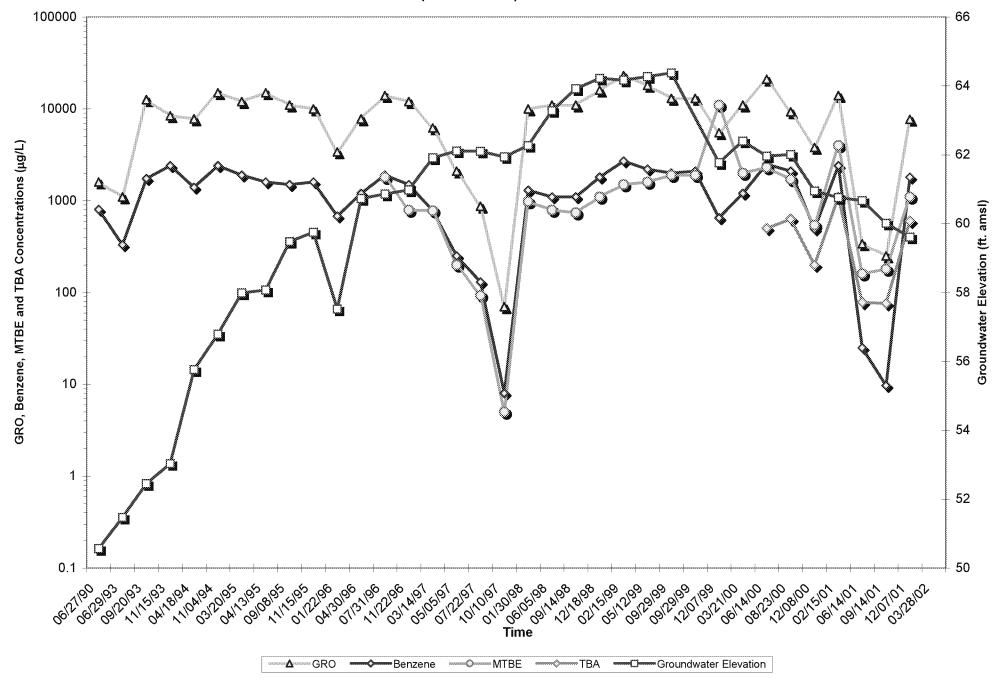
GRAPH 6 ARCO STATION NO. 5110 MW-A6 HYDROGRAPH



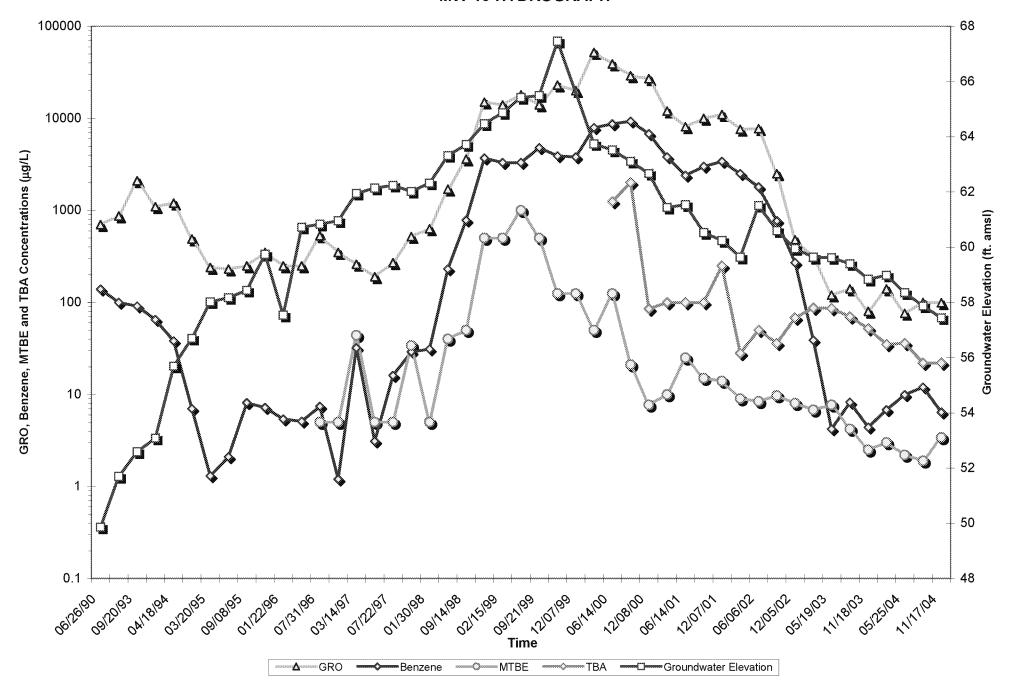
GRAPH 7 ARCO STATION NO. 5110 MW-A7 HYDROGRAPH



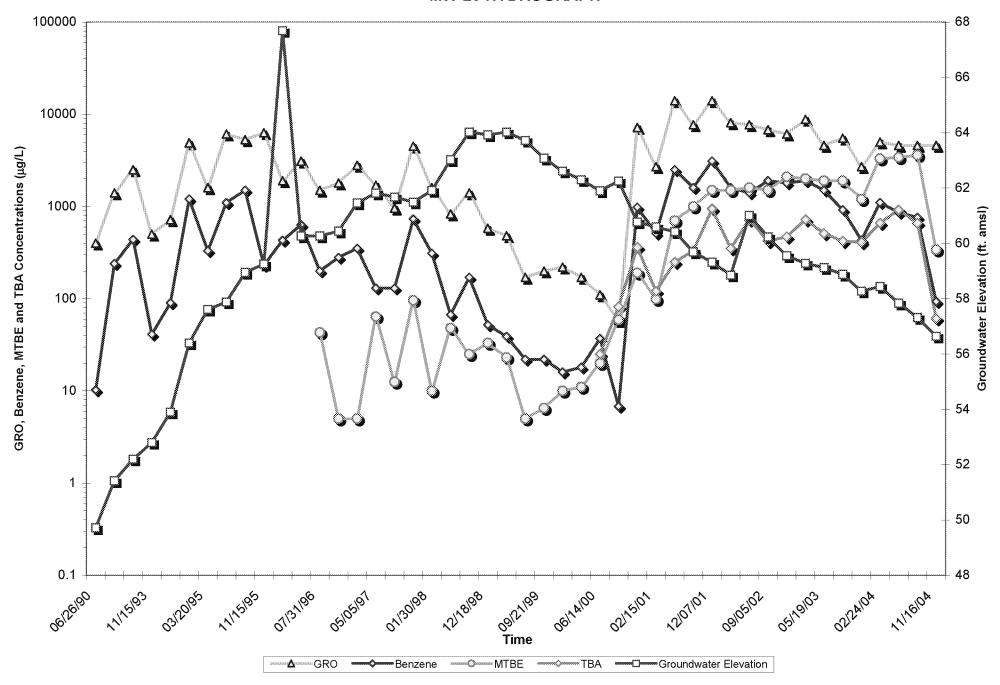
GRAPH 8
ARCO STATION NO. 5110
D-1 (Abandoned) HYDROGRAPH



GRAPH 9 ARCO STATION NO. 5110 MW-19 HYDROGRAPH



GRAPH 10 ARCO STATION NO. 5110 MW-20 HYDROGRAPH

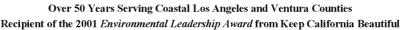


### APPENDIX A

Los Angeles Regional Water Quality Control Board Correspondence

## California Regional Water Quality Control Board







320~W. 4th Street, Suite 200, Los Angeles, California 90013 Phone (213) 576-6600 FAX (213) 576-6640  $\,$  - Internet Address: http://www.swrcb.ca.gov/rwqcb4

February 28, 2003

Winston H. Hickox

Secretary for Environmental

Protection

Mr. Ralph Moran ARCO Products Company P.O. Box 5077 Buena Park, CA 90622

IMPLEMENTATION OF FINAL DRAFT GUIDELINES FOR INVESTIGATION AND CLEANUP OF MTBE AND OTHER OXYGENATES: 1. DEVELOPMENT OF PRELIMINARY SITE CONCEPTUAL MODEL; 2. INTERIM REMEDIAL ACTION REPORT; 3. SITE CHARACTERIZATION REPORT; 4. FINAL REMEDIAL ACTION PLAN; AND 5. PERIODIC PROGRESS, UPDATE, AND MONITORING REPORTS. ARCO #5110

5731 FIRESTONE BOULEVARD, SOUTH GATE (FILE NO. I-12074) (Priority B2)

Dear Mr. Moran:

#### **BACKGROUND**

Methyl tertiary butyl ether (MTBE) has been used as an octane booster in the United States since the late 1970's and added to gasoline to comply with Clean Air Act mandates since 1979. The use of MTBE increased dramatically in the early 1990's as a result of Clean Air Act Amendment requirements for reformulated gasoline. Although MTBE in gasoline helps lessen air pollution, it has become a significant contaminant in groundwater. Relative to other fuel hydrocarbons, MTBE has a high solubility in water, a low retardation rate in groundwater aquifers, and is slow to biodegrade. These properties, combined with its high percentage in gasoline (11% to 15%), cause the potential for high source area concentrations, long plumes in groundwater, and long residence times in the subsurface environment. MTBE also has taste and odor characteristics that can impair water quality at very low concentrations. There have been impacts on drinking water wells at dozens of sites throughout California. Most notably, in the greater Los Angeles area, within the Charnock Sub-Basin, a primary local source of drinking water for the City of Santa Monica and the Southern California Water Company.

Governor Davis issued Executive Order D-5-99 on March 25, 1999, and signed Senate Bill 989 on October 8, 1999. These documents recognize that if not managed properly, MTBE can cause significant adverse impacts to current and future beneficial uses of ground and surface waters. As a result, Final Draft Guidelines for Investigation and Cleanup of MTBE and Other Oxygenates (Final Draft Guidelines) have been developed by the State Water Resources Control Board, Division of Clean Water Programs-Underground Storage Tank Program. The Final Draft Guidelines (copy attached) are intended to assist managers and staff at state and local regulatory agencies with the task of overseeing the investigation and cleanup of sites where there have been or may have been releases of MTBE-laden petroleum fuels or other oxygenates [i.e., tertiary butyl alcohol (TBA), ethyl tertiary butyl ether (ETBE), di-isopropyl ether (DIPE), tertiary amyl methyl ether (TAME), methanol (MeOH), and ethanol (EtOH)]. The Final Draft Guidelines provide definitions for areas that are most vulnerable to groundwater

<sup>\*\*\*</sup>The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption\*\*\*

\*\*\*For a list of simple ways to reduce demand and cut your energy costs, see the tips at: http://www.swrcb.ca.gov/news/echallenge.html\*\*\*

contamination, provide a priority ranking scheme for oxygenate release sites, outline a decision making framework for determining appropriate actions, and propose a timeframe for completing site management milestones.

The Final Draft Guidelines provide a framework for prioritizing resources to work on sites with MTBE or other fuel oxygenate contamination. A complete description of the seven-step process is contained within the Final Draft Guidelines (Pages 6 through 11). The Los Angeles Regional Water Quality Control Board (LARWQCB) is conservatively interpreting the Final Draft Guidelines, which will result in certain Underground Storage Tank (UST) leak cases being included within higher priorities for investigation and cleanup. During March 2001, the LARWQCB issued directive letters to all sites identified with investigation and cleanup priority of A1 [i.e., all sites less than 1,000 feet to a receptor, sites less than 3,000 feet to a receptor that have failed to provide required test results for MTBE and other fuel oxygenates, selected free product sites, and sites in close proximity to sensitive receptors (e.g., schools)]. In January 2002, the LARWQCB issued directive letters to all sites identified with investigation and cleanup priority of B1 [i.e., all sites greater than 1,000 feet and less than 3,000 feet from a receptor, selected free product sites, sites in close proximity to sensitive receptors, and/or sites containing high concentrations of oxygenates]. Now, we have reviewed the information contained in the case file for this site and have assigned an initial investigation and cleanup priority of B2 to this site [i.e., all sites greater than 1,000 feet and less than 3,000 feet from a receptor, with or without MTBE/oxygenates detection].

#### IMPLEMENTATION OF FINAL DRAFT GUIDELINES

#### Step 1: Initial Investigation/Scoping

In accordance with Step 1 (Initial Investigation/Scoping), we have reviewed the information contained in the UST case file for the site, including the most recent technical report entitled "Atlantic Richfield Company Quarterly Report" dated Quarter 4, 2002, prepared by SECOR. Based upon our review and evaluation, we find that groundwater beneath the subject site is impacted by petroleum hydrocarbons and/or the gasoline additive MTBE released from UST systems. The site is located within an area determined to be vulnerable to groundwater contamination, as defined in the Final Draft Guidelines. The site overlies an aquifer used as a community water supply and the distance to the closest municipal or domestic supply well (No. 02S12W31Q02S) is approximately 1,825 feet from the site. Based upon this information we have assigned an Initial Investigation Priority Class B2 to the site. You have been identified as the responsible party for the site and, as such, are directed to perform the following corrective action steps:

- 1. Develop a Preliminary Site Conceptual Model:
- 2. Develop a technical report detailing the results of all soil and groundwater assessment completed and submit a workplan to complete any remaining soil and/or groundwater investigations necessary to fully define the lateral and vertical extent of any free product or dissolved petroleum hydrocarbon plume(s), to include MTBE or other fuel oxygenate contamination onsite and offsite:

#### California Environmental Protection Agency

ARCO #5110

- 3. Develop a technical report detailing the results of any corrective actions completed and submit a workplan to perform any interim cleanup necessary to contain or control the spread or migration of any residual contamination:
- 4. Complete an evaluation to estimate plume travel time;
- 5. Determine a final cleanup remedy;
- 6. Perform quarterly groundwater monitoring and provide updates to the Site Conceptual Model: and
- 7. Perform a verification-monitoring program.

All steps are to be developed and performed on an expedited schedule to reduce any adverse impacts to water quality resulting from UST system leaks that have resulted at the site.

#### Step 2: Develop Preliminary Site Conceptual Model/Assign Investigation Priority Classification

Develop a Preliminary Site Conceptual Model (PSCM) Report consistent with the Final Draft Guidelines-Appendix C (Page 15). As stated above, we have already assigned an Initial Investigation Priority Class B to the site. Under this Initial Investigation Priority and for the purpose of developing the PSCM, the travel time to the nearest production well/receptor is conservatively estimated to be greater than one year and less than 3 years. The technical report (Preliminary Site Conceptual Model) containing the results of this evaluation shall be submitted to this Regional Board by July 15, 2003.

The PSCM must incorporate, at a minimum; all the components listed under Appendix C of the "Final Draft Guidelines for Investigation and Cleanup of MTBE and Other Oxygenates" dated March 27, 2000. The PSCM should provide a detailed written and graphical representation of the release scenario, site characteristics (geology, hydrogeology, isoconcentration contour maps for TPH, benzene and MTBE etc.) and the likely distribution of chemicals at the site. It should also identify all pathways for impact to potential receptors from potential sources through transport of chemicals in air, soil and water. The information contained within the PSCM for site assessment activities is critical in making determinations on the extent of assessment completed and whether any additional hydrogeologic assessment work is necessary at the site.

If the Site Characterization Report indicates that additional soil borings or groundwater monitoring wells are needed to fully define the extent of soil and/or groundwater contamination, then a workplan to complete any remaining assessment must be incorporated into your revised PSCM. The same type of evaluation is required for any cleanup action taken to date or needed to implement a final cleanup plan at the site. Technical reports previously submitted to the Regional Board detailing the results of any soil and/or groundwater assessment, periodic monitoring, or cleanup do not have to be resubmitted. However, you need to repackage the information, so that the PSCM is a complete stand-alone document. Periodic updates to the PSCM are required on a quarterly basis as required in Step 5 below and as defined in Step 5 of the Final Draft Guidelines.

#### Step 3: Interim Remedial Action

Develop an Interim Remedial Action (IRA) Report detailing the results of any cleanup actions completed to date. At a minimum, the site IRA should:

### California Environmental Protection Agency

- 1. Provide documentation that all existing UST systems operating do not have any ongoing releases. Use the Final Draft Guidelines, Appendix D (Finding Leaks in Tank Systems) as a guide for completing this evaluation;
- 2. Provide realistic estimates of the total volume(s) of fuels released;
- 3. Identify all method(s) used for cleanup of petroleum hydrocarbon fuel contamination (i.e., excavation, free product removal, vapor extraction, pump and treat, etc.). Identify any active cleanup systems in place, operational or not, together with complete details on system design, operation status, and cleanup effectiveness;
- 4. Provide the total mass in pounds for total petroleum hydrocarbon gasoline fuels (TPH<sub>G</sub>), total petroleum hydrocarbon diesel fuels (TPH<sub>D</sub>), benzene, toluene, ethylbenzene, and xylenes (BTEX), MTBE, and other fuel oxygenates removed from the subsurface from all cleanup operations employed to date; and
- 5. Identify the IRA that should be implemented to further reduce the residual mass of petroleum hydrocarbon fuels, BTEX compounds, MTBE, and other oxygenates in soil, groundwater and/or vapor phase beneath the site. The IRA should be compatible with and developed into a final remedial action plan for the site.

The technical report (Interim Remedial Action) containing the results of the IRA evaluation together with a detailed workplan to conduct any interim remedial action measures necessary to control or contain the spread of residual contamination shall be submitted to this Regional Board by July 15, 2003.

#### Step 4: Site Characterization/Determine Plume Travel Time

Develop a comprehensive Site Characterization (SC) Report detailing the results of all soil and groundwater assessments completed at the site. At a minimum, the report should include:

- 1. Site maps depicting the locations of all soil samples, soil test borings, groundwater monitoring wells, vapor extraction, or air sparging wells;
- 2. A detailed location map of the area surrounding the site to include streets, property locations and land uses (i.e., residential, commercial or industrial with site name, etc.) 250 feet upgradient, 250 feet lateral to the direction of groundwater flow, and a minimum of 500 feet downgradient of any identified contamination plume(s):
- 3. Soil boring logs and well drilling logs from prior work;
- 4. Develop scaled lithologic cross sections for the site based upon the existing soil and groundwater data/information. A minimum of three cross sections shall be developed from soil sampling programs and from the installation of groundwater monitoring wells and/or vapor wells. Cross sections shall provide the lithologic column with Unified Soil Classification System abbreviations and symbols;
- 5. Scaled groundwater contour maps depicting the direction of groundwater flow and gradient across the subject site. If the groundwater flow direction fluctuates over time, then historical groundwater contour maps reflecting these changes shall be provided;
- 6. Groundwater contaminant plume maps for TPH<sub>G</sub>, TPH<sub>D</sub>, BTEX, MTBE, and for all fuel oxygenates detected shall be illustrated in plan view and contain constituent concentrations;
- 7. A tabular summary showing: monitoring well identification number, monitoring well screened and blank intervals, completion depths, survey elevations, survey reference point, slot size(s), annular seal interval, water elevation ranges, and free product thickness, if any; and

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\*\*\*For a list of simple ways to reduce demand and cut your energy costs, see the tips at: http://www.swrcb.ca.gov/news/echallenge.html\*\*\*

8. A tabular data summary showing all historical soil and groundwater chemical and physical data to date.

The technical report (Site Characterization Report) detailing the results of all soil and groundwater assessments completed together with a workplan to conduct any supplemental hydrogeologic assessment needed to fully define the extent of any remaining free product and/or dissolved petroleum hydrocarbons, including oxygenates, to non-detect levels, shall be submitted to this Regional Board by **July 15, 2003**.

#### Determine Plume Travel Time

Acceptable methods that can be used to estimate plume travel time to reach a receptor should include the application of mainstream or industry-recognized fate and transport analytical models (e.g., Domenico Analytical Solution, 1987; Finite-Mass Advection/Dispersion Analytical Model by Fried, 1975; Freeze and Cherry 1975; and Bear 1972). Alternatively, advection/dispersion analytical models in Excel format developed by Regional Board staff may also be used (applicable to cases with a one-time release or continuous source release) and are available on our website (http://www.swrcb.ca.gov/rwqcb4 under LARWQCB Programs - UST - Models). Extensive or detailed modeling effort is not required nor is that the objective of this phase of the investigation. However, the analytical model used should be calibrated with available site-specific data, using conservative assumptions for mass released, source area, source concentration, groundwater velocity, groundwater direction (constant), dispersivities, decay rate, etc. Available site-specific data on geology or hydrogeology may be quite useful in this regard. For example, groundwater site characterization evaluation, type of soil and aquifer materials, and uninterrupted vertical profile of site stratigraphy may be used together to make conservative estimates of groundwater velocity. A technical report (as an integral part of the Site Conceptual Model Report) on this phase of the investigation shall, at a minimum include:

- 1. Detailed documentation of the analytical model used, including its limitations, conditions, and assumptions;
- 2. Detailed descriptions and layouts of the process used to arrive at the model conclusions and justification for the model assumptions applied, including literature sources;
- 3. Detailed and extensive discussions on model conclusions:
- 4. Recommendations on any additional site work that can reduce model uncertainties and further refine the Site Conceptual Model;
- 5. Any site- or region-specific data applied during the modeling process, including hydrogeologic data and historical soil and groundwater analytical data to date (if applicable); and
- 6. Any information on atypical site-specific conditions that may cause solutions to the analytical model to be unrealistic or less-conservative, such as:
  - a. Whether the site is near an area with aggressive pumping (characteristic of municipal or drinking water wells) which can alter the natural flow of water and thus affect the direction of groundwater flow and velocity;
  - b. The presence of heterogeneous aquifer materials that may cause contaminants to travel at greater velocities than the flow pathway applied for the analytical model (e.g. the existence of fractured rock and limestone caverns):

#### California Environmental Protection Agency

- c. The existence of conduits and geologic faults, and
- d. Multiple or continuous releases; and releases from different locations, that can create multiple sources or cause increases in contaminant source concentrations.

The technical report containing an evaluation to estimate Plume Travel Time, in accordance with the guidance provided above, shall be submitted to this Regional Board by **October 15**, **2003**.

#### Step 5: Update Site Conceptual Model/Assign Cleanup Priority Classification

#### Update Site Conceptual Model

This step provides for the update to the PSCM on a periodic basis, to incorporate any new and/or updated information or data (i.e., results of any additional assessment and/or any remedial activities completed during the reporting period, a complete discussion of current site conditions, a complete discussion and trend analysis on analytical groundwater data, and provide a technical Workplan for additional assessment and/or cleanup as determined by a review and evaluation of historical and current data, etc.). Quarterly technical reports shall be submitted to update the PSCM developed as part of Step 2. The SCM validation process shall be initiated starting with the quarter after the PSCM is established. The first update to the PSCM is due to this Regional Board by October 15, 2003, for the July through September 2003 quarter. The Site Conceptual Model Update is a stand-alone document that provides a complete update to the PSCM. The Site Conceptual Model Update must contain all the components that are currently required in the Quarterly Groundwater Monitoring Reports, therefore, a separate Quarterly Groundwater Monitoring Report is not required.

#### Step 6: Corrective Action/Remediation

The need for performing active cleanup may vary based upon many factors (e.g., release history, mass released into the environment, hot spot areas, site specific and regional geology, and interim cleanup actions implemented, etc.). As stated above in Step 3, a technical report containing the results of the IRA evaluation together with a workplan to conduct any interim remedial action necessary to control or contain the spread of residual contamination at the subject site shall be submitted to this Regional Board by July 15, 2003. In order to reduce any ongoing threat to water quality and potential impacts to nearby sensitive receptors from UST releases, a technical report containing a Final RAP, together with a time schedule for implementation shall be developed and submitted to this Regional Board by January 15, 2004.

#### Step 7: Verification Monitoring

Verification monitoring is an integral part of performing interim and final cleanup remedies at UST release sites. These monitoring programs will be necessary in order to determine whether any interim and/or final RAP implemented has achieved its intended purpose and will be required for all sites to determine the effectiveness of remedial actions implemented. The nature and scope of the verification-monitoring program shall be determined subsequent to

<sup>\*\*\*</sup>The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption\*\*\*

\*\*\*For a list of simple ways to reduce demand and cut your energy costs, see the tips at: http://www.swrcb.ca.gov/news/echallenge.html\*\*\*

completing full implementation of the RAP and shall be approved by this Regional Board prior to implementation.

#### LANDOWNER OR IMPACTED SITE NOTIFICATION REQUIREMENTS

Additionally, pursuant to recent changes of the California Health and Safety Code (section 25299.37.2) and Division 7 of the Porter Cologne Water Quality Control Act under Assembly Bill 681, this Regional Board is required to notify all current fee title holders of record for the site or sites impacted by releases from underground storage tanks prior to considering corrective action and cleanup or case closure.

If site assessment and/or monitoring data provided for corrective action work ongoing at the site indicate that release(s) from the underground storage tank systems have impacted offsite property(ies), then please provide the name, mailing address, and phone number for all record fee title holders for the site and any offsite property(ies) impacted by releases from the subject site, together with a copy of the county record of current ownership (grant deed or deed of trust), available from the County Recorder's Office, for each property affected, or by completing this Regional Board's "Certification Declaration for Compliance with Fee Title Holder Notification Requirements," (copy attached) for each site. If this information has been provided in the past, then you need not provide it again. Copies of all technical reports required above together with any periodic updates are to be sent directly to the property owner of the site and to any other property owner(s) impacted by UST releases from the site. The cover letter transmitting your technical reports to this Regional Board shall state that the technical reports were sent directly to all property owner(s) of the site as well as any offsite property owner impacted by the UST release(s). The cover letter shall provide a list of all property owners sent technical reports and the date the technical reports were sent.

## NEW REGULATORY REQUIREMENT FOR ELECTRONIC SUBMISSION OF LABORATORY DATA TO THE STATE GEOTRACKER INTERNET DATABASE

On June 28, 2001, the State Water Resources Control Board-Underground Storage Tank Program manager, Mrs. Liz Haven, sent you a letter informing you of the new requirements for submission of electronic laboratory data for Underground Storage Tank Program reports. These requirements are contained in emergency regulations (CCR Title 23, Chapter 16, Article 12, Sections 2729 and 2729.1) recently adopted by the State Water Resources Control Board (Board), and became effective September 1, 2001. The Board adopted these regulations to implement Assembly Bill 2886 (Chapter 727, Statutes of 2000, "AB 2886"). The regulations and other background information are available the on http://geotracker.swrcb.ca.gov and clicking on "AB 2886". The emergency regulations (Water Code Sections 13195-13198) require persons to ensure electronic submission of laboratory data (i.e. soil or water chemical analysis) and locational data (i.e. location and elevation of groundwater monitoring wells), via the Internet to the SWRCB's GeoTracker database.

In accordance with the above regulations, you are required to submit all future laboratory data over the Internet in the Electronic Deliverable Format to the SWRCB's GeoTracker database for any soil and/or groundwater samples obtained after September 1, 2001. This would include any

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sampling completed for underground storage tank system removal, site assessment activities, periodic groundwater monitoring, and post cleanup verification sampling. In accordance with the above regulations, you are also required to submit locational data for all groundwater monitoring wells (i.e., latitude, longitude, and elevation survey data) together with groundwater information (i.e., elevation, depth to free product, monitoring well status, etc.) and a site map commencing January 1, 2002. Hard copy paper reports are still required.

- 8 -

#### REPORTING REQUIREMENTS

The Final Draft Guidelines, Appendix B (Technical References) contains a partial listing of documents related to site investigation and remediation that can be used for development of workplans required by this Regional Board. The technical reports shall be submitted to this Regional Board according to the schedule contained in Table 1-Technical Report Type and Due Dates listed below. The technical reports for items: 1-[Preliminary Site Conceptual Model (PSCM) Report]; 2-[Interim Remedial Action (IRA) Report and Workplan]; and 3-[Site Characterization (SC) Report and Workplan] identified in Table 1 below must be submitted as a single stand alone technical report. Pursuant to section 13267(b) of the California Water Code, failure to submit the required technical report acceptable to the Executive Officer, by the due dates specified, may result in the imposition of civil liability penalties by this Regional Board of up to \$1,000.00 per day for each day each technical report is not received pursuant to section 13268 of the California Water Code. This Regional Board can assess these civil liability penalties at any time after the due dates specified below and without further warning.

Table 1-Technical Report Type and Due Dates

Technical Report Type 1,2,3,4	Due Dates
Preliminary Site Conceptual Model (PSCM)	July 15, 2003
Report (Step 2-Final Draft Guidelines)	
2. Interim Remedial Action (IRA) Report and	July 15, 2003
Workplan (Step 3-Final Draft Guidelines)	
3. Site Characterization (SC) Report and	July 15, 2003
Workplan (Step 4-Final Draft Guidelines)	
4. Estimate of Plume Travel Time (Step 4-	October 15, 2003
Final Draft Guidelines)	(Yearly thereafter by October 15)
5. Update Site Conceptual Model (SCM)	October 15, 2003
Reports (Step 5-Final Draft Guidelines)	(Quarterly thereafter by the following dates:
	January 15, April 15, July 15, and October 15)
6. Final Remedial Action Plan (RAP) (Step 6-	January 15, 2004
Final Draft Guidelines)	
7. Quarterly Monitoring and Progress Reports⁵	October 15, 2003
	(Quarterly thereafter by the following dates:
	January 15, April 15, July 15, and October 15)

<sup>-</sup>At a minimum, all workplans and final reports shall conform to the Guidelines for Report Submittals published by the Los Angeles County Department of Public Works and the California Underground Storage Tank Regulations.

2-All workplans are to contain an appropriate Health and Safety Plan commensurate with the level of work to be completed.

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If you have any questions or need additional information, please call Ms. Heesu Park at (213) 576-6705, or Mr. Gregg Kwey at (213) 576-6702.

Sincerely,

Original Signed by

Dennis A. Dickerson **Executive Officer** 

#### Enclosures:

- 1. Final Draft Guidelines for Investigation and Cleanup of MTBE and Other Oxygenates (March 27, 2000)
- 2. Guidelines for Report Submittals published by the Los Angeles County Department of Public Works (June 1993)
- 3. Leaking Underground Storage Tanks Program-Update Laboratory Testing Requirements (June 22, 2000)
- 4. Leaking Underground Storage Tank Program Certification Declaration for Compliance with Fee Title Holder Notification Requirements
- Cc: Robert Sams, Office of Chief Counsel, State Water Resources Control Board Michael Lauffer, Office of Chief Counsel, State Water Resources Control Board Hari Patel, State Water Resources Control Board, UST Cleanup Fund Tim Smith, Los Angeles County DPW, Environmental Programs Division Bruce Mowry, Water Replenishment District of Southern California Gareth Roberts, SECOR

<sup>&</sup>lt;sup>3</sup>-All analytical testing and sampling shall conform to the Leaking Underground Storage Tanks Program-Update Laboratory Testing Requirements, dated June 22, 2000.

4-All technical reports shall be prepared by or under the direction of a registered geologist, certified engineering geologist, or

registered civil engineer with appropriate experience.

5-Quarterly Groundwater Monitoring and Progress Reports are to be included as part of the Site Conceptual Model Updates.

### California Regional Water Quality Control Board







320 W. 4th Street, Suite 200, Los Angeles, California 90013 Phone (213) 576-6600 FAX (213) 576-6640 - Internet Address: http://www.swrcb.ca.gov/rwqcb4

August 27, 2003

Winston H. Hickox

Secretary for Environmental

Protection

Mr. Raiph Moran Atlantic Richfield Company 4 Centerpointe Drive La Palma, CA 90623

IMPLEMENTATION OF FINAL DRAFT GUIDELINES FOR INVESTIGATION AND CLEANUP OF MTBE AND OTHER OXYGENATES: 1. DEVELOPMENT OF PRELIMINARY SITE CONCEPTUAL MODEL; 2. INTERIM REMEDIAL ACTION REPORT; 3. SITE CHARACTERIZATION REPORT; 4. FINAL REMEDIAL ACTION PLAN; AND 5. PERIODIC PROGRESS, UPDATE, AND MONITORING REPORTS.

ARCO #5110

5731 FIRESTONE BOULEVARD, SOUTH GATE (FILE NO. I-12074) (Priority B2)

Dear Mr. Moran:

We have reviewed your "Remedial Action Plan," dated June 25, 2003, and "Preliminary Site Conceptual Model", dated July 15, 2003, prepared by your consultant, SECOR International, Inc., for the subject site. We would like to acknowledge the overall good job in putting together the Preliminary Site Conceptual Model in accordance with the Appendix C requirements contained within the Final Draft MTBE Guidelines and the workplan submitted for supplemental site assessment and an expanded cleanup program. As we are implementing this new and more comprehensive approach managing high priority leaking underground storage tank cases, we feel strongly that in the end, it will reduce future impacts to water quality, provide for increased protection of sensitive receptors, and reduce the overall cost and time in performing assessment and cleanup activities.

In reference to the above documents, we have the following comments:

#### I. Corrective Action

Based on the historical Soil Vapor Extraction (SVE) testing and subsurface lithology and hydrogeology, Air Sparging (AS)/SVE is proposed to remove adsorbed-phase hydrocarbons from the former tankpit and dispenser areas and reduce dissolved-phase hydrocarbons. Your consultant proposes installing five AS/SVE wells to implement the remedial system. We concur with your workplan provided the following requirements are meet:

 As already indicated, you are required to submit a Final Remedial Action Plan detailing the results of the interim corrective action and workplan for additional remedial action to this

California Environmental Protection Agency



Regional Board by **January 15, 2004**. This report must contain a scaled site-plan map with construction diagram for the existing soil vapor extraction and air sparging wells, and cross section profiles showing these wells, contamination plume, and lithological information. At a minimum, the following parameters must be included in your technical report:

- Scaled map showing the location of all wells and detailed layout of remediation system (i.e., piping and treatment system).
- Vapor flow rate.
- Pressure (or vacuum).
- Hours of system operation.
- Laboratory test results (in μg/L) including QA/QC data.
- Tabular and graphical summaries of contaminants removed versus time.
- · Contamination mass removal rates and cumulative mass removed.
- Influent concentrations and concentrations at each vapor extraction well.
- The undiluted soil vapor samples must be analyzed monthly for total petroleum hydrocarbons in gasoline (TPHg) using EPA Method 8015(M); for benzene, toluene, ethylbenzene, xylenes (BTEX), methyl tertiary butyl ether (MTBE), di-isopropyl ether (DIPE), ethyl tertiary butyl ether (ETBE), tertiary amyl methyl ether (TAME) and tertiary butyl alcohol (TBA) using EPA Method 8260B; and for oxygen and carbon dioxide content.

#### II. General

- All necessary permits must be obtained from the appropriate agencies prior to the start of work.
- 2. All work must be performed by or under the direction of a registered geologist, certified engineering geologist, or registered civil engineer. A statement is required in the report that the registered professional in direct responsible charge actually supervised or personally conducted all the work associated with the project. All technical submittals must contain a wet ink signature and seal by one of the registered professionals.
- 3. All reports must conform to the "Guidelines for Report Submittals" published by the Los Angeles County Department of Public Works.
- 4. Please notify Ms. Heesu Park at least seven (7) days prior to the start of field work, so she can schedule to be present.
- 5. Copies of all technical reports are to be sent directly to the fee title holder of the site and to any other property owner(s) impacted by the underground storage tank (UST) releases from the site. The cover letter transmitting your technical reports to this Regional Board shall state that the technical reports were sent directly to all the fee title holder of the site as well as any offsite property owner impacted by the UST release(s). The cover letter shall provide

California Environmental Protection Agency

a list of all property owners sent technical reports and the date the technical reports were sent.

#### III. Site Conceptual Model (SCM) Update

In order to implement the final remediation of the petroleum hydrocarbon plume associated with the above referenced site, the Preliminary Site Conceptual Model must be updated on a quarterly basis. You are required to submit the next Site Conceptual Model Update by **October 15, 2003.** Subsequent Site Conceptual Model Updates are to be submitted according to the following schedule:

Reporting Period	Report Due Date
January - March	April 15 <sup>TH</sup>
April – June	July 15 <sup>TH</sup>
July - September	October 15 <sup>TH</sup>
October – December	January 15 <sup>™</sup>

The Site Conceptual Model Update is a stand-alone document that provides a complete update to the PSCM. The Site Conceptual Model Update must contain all the components that are currently required in the Quarterly Groundwater Monitoring Reports. Therefore, a separate Quarterly Groundwater Monitoring Report is not required. In addition, the Site Conceptual Model Update must contain the results of any additional assessment and/or any remedial activities completed during the reporting period, a complete discussion on current site conditions, a complete discussion and trend analysis on analytical groundwater data, and provide a technical Work Plan for additional assessment and/or cleanup as determined by a review and evaluation of historical and current data. The Site Conceptual Model Update must also contain an annual revision of the Plume Travel Time data. Revised Plume Travel Time data must be submitted with the Site Conceptual Model Update during the April – June reporting period, which is due to the Regional Board by July 15, of each year. Additional revisions to the Plume Travel Time data may be required based on site-specific conditions.

#### IV. Enforcement

Pursuant to Section 13267(b) of the California Water Code, You are hereby directed to submit the periodic Updates to Site Conceptual Model Report by **October 15, 2003** and the Final Remedial Action Plan by **January 15, 2004**.

Pursuant to Section 13268 of the California Water Code, failure to submit the required technical reports, acceptable to the Executive Officer by the due dates specified above, may result in the imposition of civil liability penalties by this Regional board of up to \$1,000 per day for each day the required technical reports are delinquent from these due dates. After these dates, civil liability penalties can be assessed by the Regional Board and without further warning.

California Environmental Protection Agency

If you have any questions or need additional information, please call Ms. Heesu Park at (213) 576-6705.

Sincerely,

#### **Original Signed by**

Gregg Kwey Senior Water Resources Control Engineer

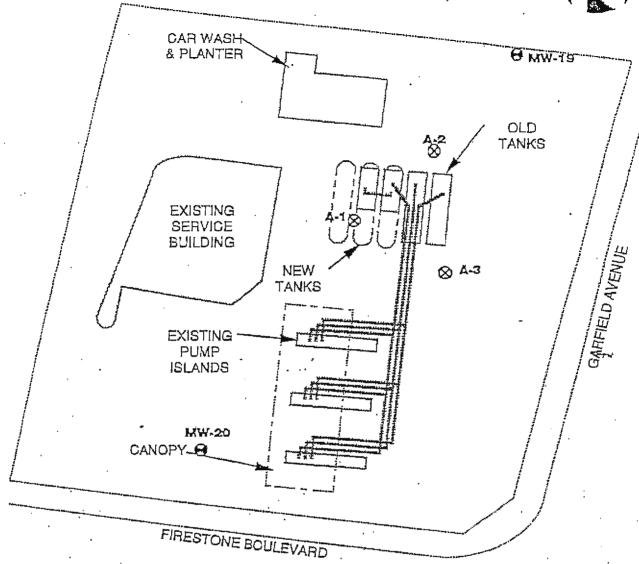
Cc: Hari Patel, State Water Resources Control Board, UST Cleanup Fund Nardy Drew, Los Angeles County DPW, Environmental Programs Division Bruce Mowry, Water Replenishment District of Southern California Gareth Roberts, SECOR

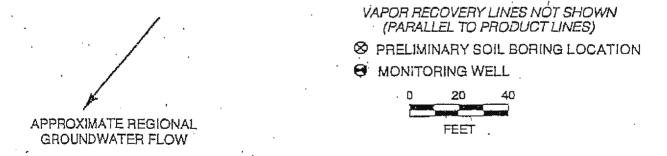
California Environmental Protection Agency

### APPENDIX B

Historical Figures

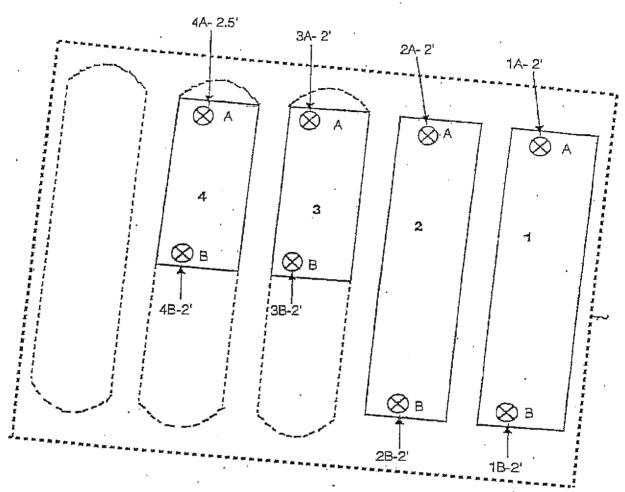






ARCO AM/PM #5110 Site Map and Preliminary Sample Locaitons Figure 2







SAMPLE A-3

1 TANK 1

APPROXIMATE LOCATION OF NEW TANK
APPROXIMATE EXTENT OF EXCAVATION

ARCO SERVICE STATION #5110 SAMPLE LOCATIONS BENEATH REMOVED TANKS FIGURE 3

### APPENDIX C

Groundwater Sampling Field Data Sheets

# Subjective and Well -Head Evaluation Form

	Project No.:	Q <sup>4</sup>	4-200	4 GR	DUND	WAT	ER	· .	Location:	South	Gate "	Date: <u>11/16/2004</u>	
	Station No.:			51	10	······································		Fie	ld Technician:	SHA	AUN	Day of Week: TUESDAY	
DTW ORDER	WELL ID	SURFICIAL SEAL	CONCRETE SEAL	LID SECURE	6ASKET	LOCK	EXPANDING CAP	TOTAL DEPTH (feet)	DEPTH TO WATER (feet)	FLOATING PRODUCT THICKNESS (feet)	OXYGEN	COMMENTS	
¥	MW-A1	Y	7	W	Y	7	7	61,40	52-18	B	0-57		
. ,	MW-A2	7	7	N,	1		7	56.63	51.43	(b)	0.51		
,	MW-A3	7	7	Y	7	7	٦ (	66.52	50-81	0_	0-39	DUP	
, X	MW-A4	Ų	Ý	Y	7	Y	7	.64.81	53.44	05	0.47	provided 2 WS well Still has vocum	
Х	MW-A5	1	5	N	7	7	7	64.81	51-90	B	0-55		
×	MW-A6	T	7	7	7	7	Y	63.20	51.44	0	0.51		-
	MW-A7	7	7	7	7	9	1	63.61	53-63	0	0.42	DTW: may be off	
\ \	MW-19	\\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\	7	1/5	1	7	1.	69.91	51.81	8	0.56	/	
X,	MW-20	1	1.	V	14	7/	7	71.84	5194	Ø	0.39		
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													_/
	; ;	-						<u> </u>			:		
	: :												
				· .					,				<b>Q</b>
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	:		1				,				~		

Note: Use G=Good and P=poor for well condition

5218

A٦	TLA	NT	IC
RI	CHF	FIE	LD
CC	DMP	AN	1A

PROJECT NO: Q4-2004 Groundwater	SAMPLE ID: MW-A1
SAMPLER: Shaun Dickinson	FACILITY NO: 5110
DATE: 11/16/04	LOCATION: South Gate

CASING	DIAM	ETER (	(inches)
--------	------	--------	----------

12

OTHER:

DEPTH OF WELL (feet): 6140	CALCULATED PURGE (gal): 4.6
DEPTH TO WATER (feet): 52.18	ACTUAL PURGE VOL (gal):
Standing Water in Casing (feet) 9.22	x 0.20= L-VYY + DTW 54.0Z=80% Recharge Water Level

2	(inches)	Standing Water in Casing (feet)	x 0.5=	3 Casing Volumes (gal.)
4	(inches)	Standing Water in Casing (feet)	x 2,0=	3 Casing Volumes (gal.)
6	(inches)	Standing Water in Casing (feet)	× 4.4=	3 Casing Volumes (gal.)
8	(inches)	Standing Water in Casing (feet)	x 7.8=	3 Casing Volumes (gal.)

Date Purged:

11/16/04

Start (2400 Hr.): 205

End (2400 Hr.): 210

Date Sampled:

11/16/04

Time (2400 Hr.): 2120

DTW @ Samp. Time: 54.0

FIELD QC SAMPLES COLLECTED AT THIS WELL (IE: FB-1, X-DUP-1):

TIME (2400 Hr.)	VOLUME (gallons)	TEMP (degrees F)	E.C. (uS/cm) ×1000	pH (units)	COLOR (visual)*	(Visual)**	TOTALIZE (gallons)
2055		22:53	0.9/	7.00	Cloudy	0.47	-148
2057	3	22-53	0.91	6.99		0.33	-149
2100	5	2257	0.842	7.06	l I	0.17	-172_
						020000000000000000000000000000000000000	

<sup>(</sup>Color) Clear, Cloudy, Yellow, Brown

#### PURGING EQUIPMENT

#### SAMPLING EQUIPMENT

1. 1. 1.	2" Bladder Pump	Bailer (Teflon)	2" Bladder Pump	Bailer (Stainless Steel)
Contrifugal Pump		Bailer (PVC)	Submersible Pump	Bailer (Teflon)
	Submersible Pump	Bailer (Stainless Steel)	Dipper	Bailer (Disposable Teflon)
	Redi-Flo2	Dedicated	Well Wizard	Dedicated
OTH	IER: . * WAC TRI	ICK	OTHER:	

Well Condition (cap, cement, padlock, so	rews, lid, etc.):	
Floating Product Thickness (feet):	Color:	Padlock Number:
COMMENTS:		
40	1 litar amban yang	16 ov poly HNO3:

WATER LEVEL ONLY. NO SAMPLE COLLECTED:

REVIEWED BY: MONLUD

<sup>\*\* (</sup>Turbidity) Heavy, Moderate, Light, Trace

Atlantic Richfield Company No. # 5110

ATLA	NTIC	PROJECT NO:	Q4-2004 <i>G</i> rou	ndwater	SAMPLE ID: MW-A2			
RICH	FIELD	SAMPLER: S	haun Dickinson		FACILITY NO: 5110			
COM	PANY	DATE: 11/16/04 LOCATION: South Gate					,	
	CASING DIAM	METER (inches)	(Z)	3 4	6 8	12	OTHER:	
DEPTH OF WE	LL (feet):	56-63		CALCULATED		2.6		
DEPTH TO WA	* *	51.43		ACTUAL PURG		3		
Standing Wate	r in Casing (fee	2t) 5-20	× 0.20= کروب	+ DTW	<u>5247 =80</u>	)% Recharge W	ater Level	
2 (inches)		tanding Water i				L	Volumes (gal.)	
4 (inches)		tanding Water i					Volumes (gal.)	
6 (inches)		tanding Water i					Volumes (gal.)	
8 (inches)	5	tanding Water i	n Casing (feet)	× 7.	8=	3 Casing	Volumes (gal.)	
Date Purged: 11/16/04 Start (2400 Hr.): 21 35 End (2400 Hr.): 2/37								
Date Sampled:	11/16/04		ne (2400 Hr.):		DTW	@ Samp. Time:	5240	
FIELD QC SAN	FIELD QC SAMPLES COLLECTED AT THIS WELL (IE: FB-1, X-DUP-1):							
TIME	VOLUME	TEMP	E.C.	рН	COLOR	TURBIRITY	T <del>OTALĪ</del> ZE	
(2400 Hr.)	(gallons)	(degrees F)	(uS/cm)	(units)	(visual)*	**(hatteily)	( <del>gallons</del> )	
2135	1	22.47	X1000 1.10	7.16	Cloudy	0.68	-250	
2136	2	22:49	1.11	7-20	11/	0.50	-253	
2137	3	2253	1.10	7-21	. (	0.43	-259	
	***************************************						, in the second	
				***************************************				
			0000000					
* (Color) Clear, Cloud	,	** (Turbidity) Heavy,	Moderate, Light, Tro	30E	SAMPLING	FOUTPMENT		
2" Blado	ler Pump	Bailer (	Teflon)	2" Blado	der Pump	,	nless Steel)	
	gal Pump	Bailer	***************************************		ible Pump	8	er (Teflon)	
	ible Pump	Bailer (Stai	nless Steel)	Dip	per <	Bailer (Disposable Teflon)		
Redi-	-Flo2	Dedia	ated	Well \	Wizard	Dedicated		
OTHER:	( VAC TRI	ZK>		OTHER:	000000000000000000000000000000000000000	55500000000000000000000000000000000000	Annacanananad2002544naananananananananananananananananana	
							90000000000000000000000000000000000000	
		padlock, screws,	999999000000000000000000000000000000000			81 t k > 1	3000000000.K	
Floating Produ	ct Thickness (t	eet):	Color:		r(	idlock Number:		
COMMENTS:								
		, , , , , , , , , , , , , , , , , , ,			S			
40 ml VOA, HCL:	40 ml VOA, HCL: I liter amber, none: 16 ox poly, HNO3:							
WATER LEVEL ON		- DLLEGTED:		REVIEWED BY:	1 Imana	DAT DAT	E:///22/m/	
					CHARK	<i>'''</i>	11000	

## GROUND SHEET SAMPLE FIELD DAT SHEET

ATLANTIC		PROJECT NO:	Q4-2004 <i>G</i> rou	ndwater	SAMPLE ID: N	\W-A3			
RICHFIELD		SAMPLER: Shaun Dickinson			FACILITY NO: 5110				
COMPANY		DATE: 11/16/	04		LOCATION: 5	outh Gate			
CASING DIAMETER (inches) 2 3 4 6 8 12 OTHER:									
DEPTH OF WELL (feet): 1010.52 CALCULATED PURGE (gal): 31.4									
DEPTH TO WATER (feet): 50. SI ACTUAL PURGE VOL (gal): 72									
Standing Water in Casing (feet) 15.7/ × 0.20= 3.142 + DTW 53.55 = 80% Recharge Water Level									
2 (inches)									
4 (inches)		tanding Water i					y Volumes (gal.)		
6 (inches)		tanding Water i				I	y Volumes (gal.)		
8 (inches)	S <sup>.</sup>	tanding Water i	in Casing (feet)	) × 7.	8=	3 Casing	g Volumes (gal.)		
Date Purged:       11/16/04       Start (2400 Hr.): //6/       End (2400 Hr.): /7.22         Date Sampled:       11/16/04       Time (2400 Hr.): /7.55       DTW @ Samp. Time: 5 3.00         FIELD QC SAMPLES COLLECTED AT THIS WELL (IE: FB-1, X-DUP-1):									
TIME	VOLUME	TEMP	E.C.	рН	COLOR	TURBIDITY	FOTALIZE		
(2400 Hr.)	(gallons)	(degrees F)	(uS/cm) x1000	(units)	(visual)*	(visual)**	(gallons)		
1655	17)	27.97	1.74	6.56	dear	Trace	-209		
1710	<u> </u>	マスト	1-74	6.93	1 -	11	-213		
1722	32	7253	1.73	0.91		L	-211		
·									
00000000000000000000000000000000000000									
	***************************************		***************************************		general parameter anno anno anno anno anno anno anno ann				
* (Color) Clear, Cloudy		** (Turbidity) Heavy,	, Moderate, Light, Tr	ace					
		QUIPMENT		**************************************		EQUIPMENT			
2" Bladd		<u> </u>	Teflon)		der Pump	Bailer (Stainless Steel)			
Contrifuç	<u></u>		(PVC)	Submersible Pump		Bailer (Teflon)			
Submersi			nless Steel)	Dipper Well Wizard		Bailer (Disposable Teflon)  Dedicated			
Redi-			cated		vvizara	ل ال	Catea		
OTHER: ( VAC TRUCK ) OTHER:									
Well Condition	(cap, cement, p	oadlock, screws	, lid, etc.):	000000000000000000000000000000000000000					
Floating Product Thickness (feet): Color: Padlock Number:									
COMMENTS: DD:(QD) 1655-0-20 (QD) 1710-0-17 (QV) 1727-014									
40 ml VOA, HCL: 1 liter amber, none: 16 ox poly, HNO3:									
WATER LEVEL ONLY, NO SAMPLE COLLECTED: REVIEWED BY: WONOM DATE! 23/07									
			•		uaaanaaaai aaaa fiisseettiininnen dystiitiin ettiin valtiinneettiin valtiin va				

ATLANTIC		PROJECT NO:	Q4-2004 <i>G</i> rou	ndwater	SAMPLE ID: MW-A4				
RICHFIELD		SAMPLER: Shaun Dickinson			FACILITY NO: 5110				
COMPANY DATE: 11/16/04			e <u>eeee oo oo</u>	LOCATION: South Gate					
CASING DIAMETER (inches) 2 3 4 6 8 12 OTHER:									
DEPTH OF WELL (feet): 53-44 64-81 CALCULATED PURGE (gal): 72-7									
DEPTH TO WATER (feet): 5-3-44 ACTUAL PURGE VOL (gal): 23									
Standing Water in Casing (feet) 11.37 $\times$ 0.20= $Z_274 + DTW 55-71 = 80\%$ Recharge Water Level									
2 (inches)									
4 (inches)		tanding Water i		DODGO DO DO DA SANTANTA A PARA PARA PARA PARA PARA PARA PARA	000000000000000000000000000000000000000		y Volumes (gal.)		
6 (inches)		tanding Water i					y Volumes (gal.)		
8 (inches)	5·	tanding Water i	n Casing (feet)	× 7.	8=	3 Casing	y Volumes (gal.)		
Date Purged:       11/16/04       Start (2400 Hr.):       15%       End (2400 Hr.):       1934         Date Sampled:       11/16/04       Time (2400 Hr.):       2000       DTW @ Samp. Time:       5%         FIELD QC SAMPLES COLLECTED AT THIS WELL (IE: FB-1, X-DUP-1):									
TIME (2400 Hr.)	VOLUME (gallons)	TEMP (degrees F)	E.C. (uS/cm) x1000	pH (units)	COLOR (visual)*	TURBIDITY (visual)**	TOTALIZE (QC) (gallens)		
19 05	Ç	21.64	7. 93	6.97	cleul.	0.63	-214		
1970	10	71.67	1.93	7.04	ιľ	OIZ	-227		
X974	2473	2170	1-73	7.05	i (	0.11	-234		
	ocuper cocuscocococococococococococococococococ	000000000000000000000000000000000000000	A.04.19						
00000000000000000000000000000000000000	. 3000000000000000000000000000000000000			A 4 00000000000000000000000000000000000					
	*(Color) Clear, Cloudy, Yellow, Brown ** (Turbidity) Heavy, Moderate, Light, Trace  PURGING EQUIPMENT  2" Bladder Pump  Bailer (Teflon)  Contrifugal Pump  Bailer (PVC)  Submersible Pump  Bailer (Teflon)  Submersible Pump  Bailer (Teflon)								
Submersi	ible Pump 🗼	Bailer (Stai	nless Steel)	Dipper		Batter (Disposable Tetton)			
Redi-	-Flo2	Dedic	cated	Well \	Wizard	Dedi	cated		
OTHER:	VAC TRU	ick -		OTHER:					
Well Condition (cap, cement, padlock, screws, lid, etc.):									
Floating Product Thickness (feet): Color: Padlock Number:									
COMMENTS:									
40 ml VOA, HCL:									
WATER LEVEL ON	LY. NO SAMPLE CO	LLECTED:		REVIEWED BY:	VIIIUSE	MO DAT	=11123104		

ATLANTIC		PROJECT NO:	Q4-2004 <i>G</i> rou	undwater SAMPLE ID: MW-A5					
RICHFIELD		SAMPLER: 5	AMPLER: Shaun Dickinson f			FACILITY NO: 5110			
COMPANY DATE: 11/16/04		04	**************************************	LOCATION: S					
CASING DIAMETER (inches) 2 3 4 6 8 12 OTHER:									
DEPTH OF WE	LL (feet):	04-81			PURGE (gal):      2	25-8			
DEPTH TO WATER (feet): 51,90 ACTUAL PURGE VOL (gal): 26									
Standing Water in Casing (feet) [29] × 0.20= Z-58Z + DTW 5448 =80% Recharge Water Level									
2 (inches) Standing Water in Casing (feet) × 0.5= 3 Casing Volumes (gal									
4 (inches)		tanding Water i		000000000000000000000000000000000000000	***************************************	E	g Volumes (gal.)		
6 (inches)		tanding Water i		0.4.40000000000000000000000000000000000	***************************************	<u> </u>	g Volumes (gal.)		
8 (inches)	S <sup>.</sup>	tanding Water i	n Casing (feet)	× 7.	8=	3 Casing	g Volumes (gal.)		
Date Purged: Date Sampled:									
FIELD QC SAMPLES COLLECTED AT THIS WELL (IE: FB-1, X-DUP-1):									
TIME	VOLUME	TEMP	E.C. (uS/cm)	pH	COLOR (visual)*	IURDIDITV (visual)**	TOTALIZE Gallons)		
(2400 Hr.)	(gallons)	(degrees F)	X1000	(units)	<b>.</b>		(gallons)		
2230	0,	23.09	1.28	7.09	dear	0.14	-250		
2239	18	2307	1.83	7.(1	<i>l</i> !	0-13	-260		
2249	24	23,06	1.83	7.11	<u> </u>	0.11	-262		
	onnecessories de la company	**************************************	000000000000000000000000000000000000000	easaasaan qo qoroo prosenseessaan and Hillan What Millian Charles and the control of the control					
<u>encoppedantes sono constituto de la con</u>	000000000000000000000000000000000000000	ki_AA00000000000000000000000000000	<u>40000000</u> 00000000000000000000000000000						
					e eggggggggggggggggggggggggggggggggggg				
* (Color) Clear, Cloudy	/, Yéllow, Brown	** (Turbidity) Heavy,	Moderate, Light, Tre	ice			4.		
	PURGING E	QUIPMENT				EQUIPMENT	10440000000000000000000000000000000000		
2" Bladd	er Pump		Teflon)	2" Bladder Pump		Bailer (Stainless Steel)			
Contrifu			(PVC)	Submersible Pump		Bailer (Tef <u>lon)</u>			
Submersi		`	nless Steel)	Dipper		Bailer (Disposable Teflon)			
Redi-	·Flo2	Dedia	cated	Well \	Wizard	Dedi	cated		
OTHER:	(VAC TRU	JCK		OTHER:					
Well Condition	(cap, cement, p	oadlock, screws	, lid, etc.):	::::::::::::::::::::::::::::::::::::::	20000000000000000000000000000000000000		999999999		
Floating Product Thickness (feet): Color: Padlock Number:							20000000000000000000000000000000000000		
COMMENTS:		~	200000000000000000000000000000000000000	400000000000000000000000000000000000000		906			
کڙي	3	*	<i>f</i>			. 5			
40 ml VOA, HCL:	. 4	1.0	1 liter amber, none		$\bigcirc$	16 ox poly, HNO3:			
WATER LEVEL ONL	Y. NO SAMPLE CO	LLECTED:	•	REVIEWED BY:	Morei	W DAT	1811/a3/64		
		•					•		

ATLANTIC PROJECT NO: Q4-			Q4-2004 Grou	undwater SAMPLE ID: MW-A6						
RICHFIELD		SAMPLER: Shaun Dickinson			FACILITY NO: 5110					
	COMPANY DATE: 11/16/04			)	LOCATION: South Gate					
COMI AIN)							000000000000000000000000000000000000000			
	CASING DIAM	METER (inches)	2	3 4	6 8	12	OTHER:			
DEPTH OF WE	DEPTH OF WELL (feet): (03-71) CALCULATED PURGE (gal): 235									
DEPTH TO WA			000000000pp		E VOL (gal): 2		000000000000000000000000000000000000000			
Standing Water in Casing (feet) 11.76 × 0.20= 2.352 + DTW 53.79 =80% Recharge Water Level										
2 (inches)	S	Standing Water in Casing (feet)			5=	3 Casing	3 Casing Volumes (gal.)			
4 (inches)	, S	tanding Water i	n Casing (feet)	) × 2.	0=	<u> </u>	y Volumes (gal.)			
6 (inches)	S	tanding Water i	n Casing (feet)	) × 4.	4=		y Volumes (gal.)			
8 (inches)	5	tanding Water i	n Casing (feet)	) × 7.	8=	3 Casing	y Volumes (gal.)			
Date Purged:	11/16/04	Sto	art (2400 Hr.):	7214	E	: End (2400 Hr.):	73 41			
Date Sampled:	000000000000000000000000000000000000000		me (2400 Hr.):			@ Samp. Time:				
•		l		001000000000000000000000000000000000000	•	•	economiconomiconesis con consequinamente consequin			
FIELD QC SAN	APLES COLLEC	TED AT THIS		1, X-DUP-1):						
TIME	VOLUME	TEMP	E.C.	рН	COLOR	THRBIDITY	TOTALIZE			
(2400 Hr.)	(gallons)	(degrees F)	(uS/cm) x1000	(units)	(visual)*	( <del>visual)</del> **	(gallons)			
2327	8	21.18	1.04	7.08	dear	0.13	-178			
2833	16	2620	1.69	7,10	. V(	0,12	- 184			
2341	24	21.21	1.69	7.10	a	013	-192			
	000000000000000000000000000000000000000				<u>.</u>					
	-						i			
	00bb/s0bb/s0bb0000000000000000000000000		50000000000000000000000000000000000000				7			
* (Color) Clear, Cloudy	, Yellow, Brown	** (Turbidity) Heavy,	Moderate, Light, Tre	ace						
	PURGING E	QUIPMENT			SAMPLING	EQUIPMENT	V.			
2" Bladd		_	Teflon)	2" Blado	der Pump	00000	nless\Steel)			
Contrifue	*	Bailer	(PVC)	Submersible Pump		Bailer (Teflon)				
Submersi	ble Pump	Bailer (Stai	nless Steel)	Dipper		Bailer (Disposable Teflon)				
Redi-	Flo2	Dedic	cated	Well \	Wizard	Dedi	cated			
OTHER: (	VAC TRA	JCK		OTHER:		000000000000000000000000000000000000000	Whenever week 1990-1990 Webser with the State of			
Wall Canalisian	(see semant r	and all annua	lid ata ):	and the state of t		99995000000000000009999999999999999999				
Well Condition (cap, cement, padlock, screws, lid, etc.):  Floating Product Thickness (feet):  Color:  Padlock Number:										
COMMENTS:										
}										
40 ml VOA, HCL: 1 liter amber, none: 16 ox poly, HNO3:										
WATER LEVEL ONLY. NO SAMPLE COLLECTED:  REVIEWED BY: MONCHO DATE: 1/23/6V										
WATER LEVEL UND	NO SAMELE CO	ELLIO I CUO			MI CON	W SAI	THADION			

ATLANTIC		PROJECT NO:	Q4-2004 <i>G</i> rou	ndwater	SAMPLE ID: MW-A7				
RICHFIELD		SAMPLER: S	haun Dickinsor		FACILITY NO: 5110				
COMPANY		DATE: 11/16/	04	<u>2002/2002/2007/2007/2007/2007/2007/2007</u>	LOCATION: South Gate				
CASING DIAMETER (inches) 2 3 4 6 8 12 OTHER:									
DEPTH OF WELL (feet): (00-52 63-10) CALCULATED PURGE (gal): 19.9									
DEPTH TO WATER (feet): 53-63 ACTUAL PURGE VOL (gal): 7\$									
Standing Water in Casing (feet) 9.58 × 0.20= 1496 + DTW 55-62=80% Recharge Water Level									
2 (inches)									
4 (inches)	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	tanding Water i		000000000000000000000000000000000000000	000000000000000000000000000000000000000	A	g Volumes (gal.)		
6 (inches)		tanding Water i			000000000000000000000000000000000000000	-	g Volumes (gal.)		
8 (inches)	<b>.</b>	tanding Water i	in Casing (feet)	) × 7.	8=	3 Casing	g Volumes (gal.)		
Date Purged:	11/16/04	Sta	rt (2400 Hr.):	1953		End (2400 Hr.):	2020		
Date Sampled:		•	me (2400 Hr.):	***************************************		@ Samp. Time:	OCK-P		
•	000900000000000000000000000000000000000	TED AT THIS		<b>January</b>			20000000000000000000000000000000000000		
TIME	VOLUME	TEMP	E.C.	рН	COLOR	TURBIDITY	TOTALIZE		
1			(u5/cm)	(units)	(visual)*	( <del>Visual</del> )**	(gallons)		
(2400 Hr.)	(gallons)	(degrees F)	X1000	l	<b>&amp;</b>	(visuu-)			
2004		22.42	2.13	6.97	clear	08	- 232_		
7013	<u> 17</u>	22,42	2.13	7.01	111	0.13	-245		
2670	- 2/	22.42	213	7.02	1/	012	-Z49°		
			***************************************						
10000000000000000000000000000000000000	************************************		***************************************	20000000000000000000000000000000000000					
					8	<b></b>			
* (Color) Clear, Cloudy		** (Turbidity) Heavy,	, Moderate, Light, Tr	ice	:				
ganganpanananananananananananananananana		QUIPMENT				EQUIPMENT			
2" Bladd		<u> </u>	Teflon)	2" Bladder Pump		Bailer (Stainless Steel)			
Contrifu	- 1	<u> </u>	(PVC)		ible Pump	Bailer (Teflon)			
Submersi		·	nless Steel)	Dipper Well Wizard		Bailer (Disposable Teflon) ` Dedicated			
Redi-			cated		Wizara	Dear	сатеа		
OTHER:	VACTRI	JCK J		OTHER:					
Well Condition (cap, cement, padlock, screws, lid, etc.):									
Floating Product Thickness (feet): Color: Padlock Number:									
COMMENTS:	00000000000000000000000000000000000000								
40 ml VOA, HCL: 1 liter amber, none: 16 cx poly, HNO3:									
WATER LEVEL ONLY, NO SAMPLE COLLECTED:  REVIEWED BY: MMOMM)  DATE:///2.3/07/									
Kin. standardardardardardardardardardardardardard	***************************************		•		<u> </u>		1		

SAMPLE ID: MW-19

PROJECT NO: Q4-2004 Groundwater

ATLANTIC

RICHFIELD		SAMPLER: S	ihaun Dickinson	,	FACILITY NO	: 5110				
COM	PANY	DATE: 11/16/	04		LOCATION: South Gate					
	CASING DIAN	NETER (inches)	2	3 4	6 8	12	OTHER:			
DEPTH OF WELL (feet): 69.9 . CALCULATED PURGE, (gal): 36.2										
DEPTH TO WATER (feet): 51. SI ACTUAL PURGE VOL (gal): 27										
Standing Wate	Standing Water in Casing (feet) 18.10 × 0.20= 3 (2) + DTW 55-43 = 80% Recharge Water Level									
2. (inches)	5	Standing Water in Casing (feet) × 0.5= 3 Casing Volume								
4 (inches)	S <sup>.</sup>	Standing Water in Casing (feet) × 2.0= 3 Casing Volumes (gal.)								
6 (inches)	Sį	tanding Water i	in Casing (feet)	× 4.	4=	. 3 Casing	g Volumes (gal.)			
8 (inches)	S	tanding Water i	n Casing (feet)	× 7.	8=	3 Casing	g Volumes (gal.)			
Date Purged:       11/16/04       Start (2400 Hr.):       003       End (2400 Hr.):       003         Date Sampled:       11/16/04       Time (2400 Hr.):       01 Z6       DTW @ Samp. Time:       57/15         FIELD QC SAMPLES COLLECTED AT THIS WELL (IE: FB-1, X-DUP-1):										
TIME	VOLUME	TEMP	E. <i>C</i> .	рН	COLOR	TURBIDITY	TOTALIZE			
(2400 Hr.)	(gallons)	(degrees F)	(u5/cm)	(units)	(visual)*	(visual)**	(gallons)			
0617	17	2199	1.25	6.98	Clear	0-30	-185			
00.45	24	22.05	1.85	7.00	11	0.35	-198			
0103	37	22.10	1.84	6,99	l.	0.32	-192			
	000000000000000000000000000000000000000	000000000000000000000000000000000000000	***************************************							
	***************************************		ando-enegoposococococococococococococococococococ							
				***************************************						
* (Color) Clear, Cloud	,	** (Turbidity) Heavy, QUIPMENT	Moderate, Light, Tro	ace	SAMPLING	EQUIPMENT				
2" Blado	ler Pump	Bailer (	Teflon)	2" Blada	der Pump		inless Steel)			
Contrifu	gal Pump		(PVC)	Submers	ible Pump	Bailer (Teflon)				
	ible Pump		nless Steel)		per <	Bailer (Disposable Teflon)				
Redi-	-Flo2	Dedic	cated	Well \	Wizard	Dedicated				
OTHER:	/ VAC TRU	ICK	99990000000000000000000000000000000000	OTHER:						
Well Condition	(con cement r	odlock screws	lid etc.):	000000000000000000000000000000000000000	00000000000000000000000000000000000000	NCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC				
Well Condition (cap, cement, padlock, screws, lid, etc.): Floating Product Thickness (feet): Color: Padlock Number:										
COMMENTS:	oooooooooooooooooooooooooooooooooooooo	M0000000000000000000000000000000000000				popuja na 1900 1900 1900 1900 1900 1900 1900 190	000000000000000000000000000000000000000			
,,,,,,,										
							140440040			
40 ml VOA, HCL: 1 liter amber, none: 16 ox poly, HNO3:										
WATER LEVEL ON	LY, NO SAMPLE CO	· LLECTED:		REVIEWED BY:	DIMM.	MO DAT	TE: /// 2.3/00			
and the second			•		( 1 1 1 0 0		11 -10/-7			
	•									

# GROUND ATER SAMPLE FIELD DAT SHEET

ATLA	NTIC	PROJECT NO:	Q4-2004 Grou	ndwater	SAMPLE ID:	MW-20					
RICHF	TELD	SAMPLER: S	haun Dickinson		FACILITY NO	: 5110	***************************************				
COMP	PANY	DATE: 11/16/	04		LOCATION: S	outh Gate					
		NETER (inches)	2	3 4	6 8	12	OTHER:				
DEPTH OF WE	LL (feet): 7/	-84		CALCULATED	PURGE (gal):	39.8					
DEPTH TO WA				ACTUAL PURG		40	000000000000000000000000000000000000000				
Standing Wate	r in Casing (fee	rt) 199	x 0.20= ፞፞፟ፘ <sub>-</sub> ን	} + DTW(	55-92/=80	0% Recharge W	ater Level				
2 (inches)	5	tanding Water i	n Casing (feet)	x 0.	5=	3 Casing	y Volumes (gal.)				
4 (inches)	S	tanding Water i	n Casing (feet)	) x 2,0	D=	8	y Volumes (gal.)				
6 (inches)		tanding Water i			000000000000000000000000000000000000000	8	y Volumes (gal.)				
8 (inches)	5:	tanding Water i	n Casing (feet)	) x 7.1	8=	3 Casing	y Volumes (gal.)				
Date Purged: Date Sampled:	11/16/04 11/16/04		nrt (2400 Hr.): me (2400 Hr.):	<del>9000000000000000000000000000000000000</del>		End (2400 Hr.): @ Samp. Time:					
FIELD QC SAMPLES COLLECTED AT THIS WELL (IE: FB-1, X-DUP-1): FB-5710-2004 1116 @ 1880											
TIME VOLUME TEMP E.C. pH COLOR TURBIDITY TOTALIZE (2400 Hr.) (gallons) (degrees F) (uS/cm) (units) (visual)* (visual)** (gallons)											
1800	15	72-58	1-28	7.0%	clout	0-18 -208					
1804	70	22-61	1.79	7.04	۱,	0-18	-207				
1808	25	7258	1.82	7.05	11	0.35	-189				
1810	30	22 63	1.83	7.05		0-39	-183				
18110	35	22.66	1-81	7.05	<u> </u>	0.25	-185				
1822	40	7269	1-8/	7:05	1/	0.18	-188				
* (Color) Clear, Cloudy		** (Turbidity) Heavy, QUIPMENT	Moderate, Light, Tr	ace	SAMPLING	EQUIPMENT					
2" Bladd		Bailer (	Teflon)	2" Blado	der Pump		inless Steel)				
Contrifu		Bailer			ible Pump	Ž	(Teflon)				
Submersi			nless Steel)	1	per <	<u> </u>	sable Teflon)				
Redi-	,	Dedia		<u> </u>	Wizard	S. SECRETORISMO	cated				
OTHER:	( (VAC TRU	JCK :		OTHER:							
Well Condition	(cap, cement, t	oadlock, screws	, lid, etc.);	nnannananananananananandhidisikidi	***************************************						
Floating Produc		000000000000000000000000000000000000000	Color:		Po	adlock Number:					
COMMENTS:	A000					0.0000000000000000000000000000000000000					
40 ml VOA, HCL:	A		1 liter amber, none		0	16 ox poly, HNO3	. ,				
•	1	il namns.	I HIS MINUSE, HOUSE	DEVITEWEN DV	more	1111)	1//> 3/6				
WATER LEVEL ONL	.y. NO SAMPLE CO	LLECTED:		KEATEMED RAS		UU DAT	151/19/109				
				-			1				

Atlantic Richfield Company No. # 5110

			International,					-		
one entre les contents de la content de la c			ng/Vapor Extraction		_og			an de mile	THE WIPPERS	
				OHMAILION	Participation of the same			nulson monte	al Systems ET	L950
是有一种。1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,1995年,	Atlantic Richfield Co								perate No. F6	
COMPANY OF THE OWNER OF THE PROPERTY OF THE PR	5731 East Fireston		Gate, California Da	1719		A the latter fact for	Militariide (Mi	THU25	With the street	me: 1415
TECHNICIAN	ار کردی initials: کری کارک		NG HOURS:		94 9.72		Charles No. 120	() () () () () () () () () () () () () (		
ARRIVAL STATUS	Gas Meter	Indeed to a contract			Electrical*	Leave agrap quarter, our	NOWING THE TANK	23.59	٠,٠٦	KWh
PUREMES WAS A STATE OF THE STAT		20159 ************************************	ESPACE ETO	A CONTRACTOR OF THE STATE OF TH	PROSES	Schoolsen de la contraction de	WAR ST			Water the Control of
Temperature	Process:	1511	es fareceivaire instruments	°F	Post Cat.:	151				°F
Temperature Process Flow		sofm		Chart Papers				inifold Vac	uum: 50	
	PRESTRIBLES	·lin H₂O ΔP;				1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Source File		159	scim
Effluent Flow (Pitot Tube)	PARTITION TO	On FLO API	经强度制度 維列克氏	20 Tempik					Auton (200)	Scfm YEANO
Blower	Amps: -2.	<del>2.1</del>			7		change O	III ARRENT TE	s/No Bells (	%ореп
Dilution Valve	Auto:							A CV STEEL		m V
LEL Reading VES Concentrations	Influent (Diluted)	THE RESIDENCE THE PARTY OF THE	ppm Influen		でとい			Effluent	11.8	ррт
Monitoring Device	· · · · · · · · · · · · · · · · · · ·	15 2000	umanana kalanana karana		oşanonorere	type/date	100 P	PM 12	1 W	7-04
			W. WAPOR EXT	RACTION WE	LES				海洋流淌	和原用的原则的"2000"
WELL NO. Well Interval	Status O/C	Vacuum (!wc)	Ų. Conc. (ppmv)	MENAP	("wc)	Fremp (C	eg.F)	Flow (sc	m) I SDTW	4. 6. 77
Shallow.	13			<b>新型型系统</b>	经数据的	是其特別				# B to 28
SVE-1 Deep A	100	50	121	體制的	Sur Maria				N PERMISS	model from the experience for the contract of
SVE-2	75		/	ACULTATION	Caranta Principal	等通過 (高級 1986年) 電視		elections ha		
	100	50	1822			A A SA	All Syr Augus 44 7 Company and Augus 44 7			The second secon
SVE-3.	100	50	2832	1700 M. A. S.	all to the state of	E7444		医精神学		4 1 35 to 55 维数
Shallow	ā.			<b>北海山</b> 村	SALWA	<b>医有种类性</b>	的能量符件			
SVE-4 Deep Deep	100	50	1773	表別的	。我想27摄	国際學家	·斯基利 /		e de la composição de la c La composição de la composição	The second secon
SVE-5 Shallow is a	0				CONTRACTOR	P. J. quarter		The State of the S	American Constitution Americanic Society	1412 79 1414 1711 1711 1711 1711
/SVE-5	100	50	736	2 m 20 000	Andreas	EST BEST	CASTASSICA C	ARCRE VERSE STORE WAS		1010 30 14 10 10 10 10 10 10 10 10 10 10 10 10 10
MW-A7	Idea Moradan Initial	50 h::::::::::::::::::::::::::::::::::::	1372 ************************************	MATERIAL POLICE	and the	AND AND A	Y Carte			35 fo 65
Deep Shallow			I ALL INOTIC	ONNECTED	TO SYSTEM	Marie (190	Minimalika Minimalika	4544	kenellys Pol	4107 4107
VEW-2				ONNECTED		in the sould need to be	即推進		en en la company	12to 29
Deep :	ear satisfication	能感情情,严慎的心	<b>INOTIC</b>	teb		nnnenhane vi	· Laborator	国洲巴纳州	directively	(34 to 54 ⊤ ∞
大型。( <b>D-3</b> )。[1] [1] [1] [1] [1] [1]	<b>图集中国大学等的</b>	5年學習者12世代中	福度。 FONOTIC	Andrew Control of the Principle of	cutting and the state of the	MEAL THE	Total Committee Committee		CHARLEST HER	710 47
			AIR COMPRESS	OR:MAINTE)	ANCE		dala Tite-			
Air Compressor ON/Œ	305 (1986) \$100 (1986)	ressure si) —	-14118	-	Chang		Yes/	NO	Changed Oil	Yes/No
		SYSTEM MONITO	PINC	mar and				CO	MPLIANCE	ner og Gunganer i træskalbærer i 1900 Gunganer i Liver og det filmer Gunganer i 1900
POINT NUMBER		Pressure (psi)	Cycle On Gycle	Oji), † Oyela On	Cycle Off	DO NOT	OPERAT	<b>以表现的</b>	<b>总部为4份信息的基础</b>	TIONS ARE SATISFIED
AS-1	<u> </u>		12:00 AM 2:20		Window Maria de La Company			nit Posted?	Saborth A. C. C. A.	YES/No
AS2 300	M .		2:20 AM: 44:40	and the state of the state of the	Company of the name of	VEST	low Rate	<300 SCF	M?	XEB/No
Language AS:a	·		4:40 AM 7:00	dataset in the managed and in the st	A. GOVERNMENT STREET	all ten	perature	>1,500 9F	2484	YGS/No
3 in AS4		monneys for Mills	7.00 AM 9.20	THE COURT SCHOOL STREET CONTRACT	9:20 PM	Efflüent	VOC <50	ppmv (as	Hex)?	Yes/No
5 AS-5			9:20 AM 31:40	State to State of	(11 40 PM	name of the State of State		gs On-Site		:Yes(No
The state of the s			ONTHLY CERTIF	of section applications for the	Called Live and Milator bear land	a service of the serv	4			<b>联型原始系统</b>
The state of the s	AND DESCRIPTIONS OF THE PROPERTY OF THE PROPER		OMETIC OCTOR	REO	JIRED ANAL	YSIS AND S	SAMPLING	CONTAINE		LUENT LIMITATIONS
NOTE: Influent and Effluent Samples milet be	Sample	Sample Date	Sample Time	, T	PHg	BTEX & S		Benzer	18	/OCs = 50 ppmv
Elluan Sampies must be Collect of collected within 15 september of one another.	Collected?				015 Mpd.	EPA 8		EPA 410		
influent Monthly	YES/NO	10-7-04	1515		1 Tedia			CHARLES THE SEC	erial bina	
Effluent 124 Committee	YES/NO	<u> </u>	1505		1 Tedis	ar Bag		1 Tedlar		nzene = 0.24 ppmv
The state of the s	\$	6NOFF	1303	AMENIAL CONTROL OF THE PROPERTY OF THE PROPERT	<b>建筑新的</b>	Drums:		<del>-</del>	empty	full
STATUS DEPARTURE			<u>0</u> 44444	rively mand had	<b>建设设计划的 196</b> 0年	Selberg Segment of				00000000000000000000000000000000000000
1 'htes: List all activitles, observatio	ons, recommendatio	ns								
had been an all	الاش رسا	URON	ARRENA	C D'	LD C	5 M	_CO (	<u>አደራ በ</u>	20 K	ch.
DAGA AN				MPIOS			<del>رستدس</del> . ' حدنه ه		0 9C	
DEPARTU			7							
	income in the second									
All O&M activities must be condu	ıcted every seven ı	days or sooner un	ess otherwise In	dicated by a	'(Monthly)'	note.	_			

	SECOR International, Incorporated  Air Sparging/Vapor Extraction Monitoring Log											
er 195 announcement of the same services	SITE INFORMATION											
<b>Paratition</b>		SEE STAINING SEE										
LIENT/SITE			ompany Station No		Tarser February Julian	Unit: Paragon I						
ADDRESS	the fact that the second		e Boulevard, South			rmit No.: SCAQMD		No. F61746				
TECHNICIAN		Initials: 605			10-14-04	. Weekday: Alanms:	THURS	Maria D400				
ARRIVAL STATE		ØNOFF		NG HOURS:	m / therm   Electrical	The Court of the Associated Proceedings of the Court of t	24715 _	KWh				
MUTICITIES (		Gas/Meter	20923		SKID	Market Market Construction of the Construction						
	There is a section of a Colombian I			NAME OF THE PROPERTY OF THE PR	<sup>o</sup> F Post Cat.:	15(5	Control of the second s	ak				
Temperature Process Flow	and the first of the state of the large	Process: 17	169 scfm	Change Cha	rt Paper 3 (és	/No M	anifold Vacuums	5.3 "H <sub>2</sub> 0				
Source Well Flo	w (Pitot/Tube)	PMATE COME	Qin H₂O AP: Was,	。可注册 # InH₂O	Temps: 57	F Source F	low: 169	scfm				
Effluent Flow (P.	ltot Tube) 내가 다	Physical Control		Marked Sin H <sub>2</sub> O	Temps: 1, 1, 1, 1, 1, 1, 1	Effluent I	Flows III	scfm Belts OK2				
Blower	10. 3 to 1 to 1 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Amps:	28	<u> </u>		Yes(No Change (	JIIA BENEAL LERNANI	Belts OK? CesiNo %open				
Dilution Valve	所於東京中的學術語 第15年1月1日 - 新海田倉田	Auto:		<del>と</del> MEDIATION	%open Manual:		<b>超過過過過過</b>					
VES Concentrat	the state of the state of the state of	Influent (Diluted)	About Editor Lead of the Constitute of A consti	ppm (Influent (Vi		ppm		ppm				
Monitoring Devi	der Security 25 - Terreton Security (Constitution)	MENT RA	e 2000	2	Calibration	n (type/date) ا		110-14-07				
erate en la companya de la companya	对知识的影響		VAPOR EXTRA	THE TAXABLE PROPERTY OF THE PR			Agric to the format world for making the constitution	eading express as Hexane				
WELL NO.	Well Interval	ાં, Statuş O/C∜/	∦Vacuum (!wc)	acception in the second second second second	ΔP ("wc)"/	Temp (Deg. F)	Flow (scfm)	'DTW (ft)   Well Screen (ft)				
sve-1	Shallow	**			的情况和特别的。 1885年1月1日	The Committee of the		8 to 28				
	Deep	100 100	53	<u> </u>	Contraction of the Contraction o			5. 红色的 10.27				
/ SVE-2	Deep	100	-53	1621		<b>全国的大陆等位的</b>	<b>南京6月,李孝</b> 文章	35 to 55				
	Shallow		1236		生物 的复数经济流	<b>新加州。但《加州</b>	1000年(1000年)(1000年)(1000年)	8 to 28				
SVE-8	Deep	(00)	53	2049		的原理學的學	學的的數學的物質的	35 to 55				
SVE-4	Shallow 5						建设定量的共聚基本的影響 新加速以及MATERIA	7 to 27				
Continue Continue	Deep 70 10	<u> </u>	53	944	i dendera Personal II den Personal mendika Sanda		在1900年的 1900年 (1900年) 中国共和国共和国共和国共和国共和国共和国共和国共和国共和国共和国共和国共和国共和国	6 to 28				
SVE-5	Shallow Deep	100	53	18.3		ER PROPER		34 to 56 📆 🖠				
**************************************	Shallow	100	53	841	mental areas	<b>的图像是1000年</b>	性理則被關當其中	10 to 30				
MW-A7	Deep 1955		<b>建筑的设施</b>	<b>在中国的</b> 的建设。	<b>特别的</b>	<b>特的數學的</b>	<b>建</b> 构设置等	35 to 65				
	Shallow 5	<b>对。由于用户的联系的</b>	mer in Merch	entertainment of the first of the second	NEOTEDITOISYSTE			4 to 7				
VEW-2	Mid				NECTED/TO SYSTEM NECTED/TO SYSTEM	and the second of the second o		12 to 29				
D-3	Deep				VECTED TO SYSTE	official state and our or that both overhalds		2007 10 47n				
islandario de la companya de la comp				AIR COMPRESSOR	MAINTENANCE	對於物質關係的	制度的特殊制度	<b>等最高的特殊。然后的基本的</b>				
138465-1947		Tilank P	V-000000000000000000000000000000000000	Line Off-		jed Alr	ທີ່ລີນ. ຕະຄວາມ	red Oil? Yes/No				
Air Compressor	ONOFF	1.05 Y 200, 510, 151, 3V 2 H2	61), 198			er?	(No) Chan	ged Oil? Yes/No				
Compared to the control of the contr			STEM MONITO	RING		ELLE MARKET	COMPLIA	NOE				
POINT		Flow (scfm)	Pressure (psi)	Cycle On Cycle Off i.	Cycle On Cycle Off	DO NOT OPERA	<b>美国发展的</b>	ONDITIONS ARE SATISFIED				
TOWN TOWN	AS-1	, <i>,</i>		12:00 AM 2:20 AM	12:00 PM 2:20 PM	La Danker and Charles and Committee of		CYès/No				
7	AS-2			10,5402	114:20 PM, 4:40 PM	VES Flow Rate	<800 SCFM?.	—¥as/No				
e new mining for the con-	7 AS-3			the beautiful to said the first that the second	16:40 PM (7:00 PM	Temperature	9>1,500,PF7,\#\	CY9s/No				
4	AS-4 ()			7:00 AM 9:20 AM	19:00 PM 1,9:20 PM	All and the state of the state	ppmy (as Hex)?					
4	AT THE CONTROL OF THE PARTY OF THE		·	9:20 AM 11:40 AM		A CONTRACT OF THE CONTRACT OF		CYES#No				
THE STATE OF THE S			· · · · · · · · · · · · · · · · · · ·	ONTHLY CERTIFIED	VAPOR SAMPLING	State Transport		<b>非然是你当时或自己的</b>				
(NOTE: Infloent and					海 REQUIRED ANAL	YSIS AND SAMPLING		EFFLUENT LIMITATIONS				
Effluent Samples must be collected within 15	Collect 3	Sample Collected?	Sample Date	Sample Time	TPHg	BTEX & Standard Oygenates	Benzene	NOCs = 50 ppmv				
minutes of one another	Campies			>	EPA 8015 Mcd.	EPA 8260B	EPA 410A					
Influent	Monthly	YES#10			1 Tedia	ar Bag	Towns of Smile in the second	Benzene = 0.24 ppmv				
Effluent 🖟	Monthly	YESDIE	1		1 Tedla	ar Bag	1 Tedlar Bag	THE RESIDENCE OF THE PARTY OF T				
STATUS DEPAR	TURE:		ØÑ∕ÒFF		1000 mm	Drums:	empty	full				
PRODUCT STREET, CO. CO.	23 C . 15 . 15 . 15 . 15 . 15 . 15 . 15 .	ons, recommendati	ons	g-gy	boomer and the second	00000000000000000000000000000000000000	***************************************					
54576		05 ひ予めへ		ou DED a	CUA NIS	COLLEGIE	D au	SAMS.				
345 TE		م من لاه	DePA	RIVER	F							
	e.Lumpy P			-								
- 10° 00° 00° 00° 00° 00° 00° 00° 00° 00°							***************************************	1.300				
I	•	*										

	SECOR International, Incorporated  Air Sparging/Vapor Extraction Monitoring Log  SITE INFORMATION										
a Salvaria de Maria de Cara de	S. Sederay, alto Southern and american	and the second s									
		Water Strain Committee	<u> </u>		TE/INFOR	性(MOITAIN	and to be the other party	office of the U.S. Commercial Com		ama et esc	19月日1日 19月1日 6日 1月日 1日
JENT/SITE	CONTRACTOR OF CONTRACTOR	Atlantic Richfleld C				l l		at consult NUMBER	Environmental Syst		
ADDRESS		5731 East Fireston					γ	mit No.: ISCAQM Weekday:	Permit-to Operate	Salar and Salar data are said.	0900
TECHNICIAN	of each the forces and officer details.	Initials: G.) S. U. ON/OFF		ING HOURS				vveekoay. Alarms	FSC FO		0,00
ARRIVAL STATE		Gas Meter						Meter - 1	25662	ULT	KWh
Unitinto /	arana a <i>ra</i> n dalah		<u> 21586</u>  雑調整数	and the second		SKID	-	The second secon			9.1576.774173.873
Temperature		Process:	1505	incollection and substantial	(DC-0/4/4/-1)		Post Cat.:	1507			□F
Process Flow			った sofm	語語類型Ch	ange:Cha		<ි?ම්8∕	No MARKET	lanifold Vacuum.	47	"H₂O
Source Well Flo	w (Pitot Tube)		In H <sub>2</sub> O AP <sub>ER</sub> SE	推自的影響		Temp# 16		#் ¦ீர் Sourceil		and the second of the second of the first	scfm
Effluent Flow (P	1.15 mm 2.17 to 22 d 320	Physical States				Lubricate:		Effluent		Belts OK?	The second second second
Blower Dilution Valve		Amps:	عا2		A		Manual:	Change.	Ontragant Conto	Della: Ortani	%open
LEL Reading	and the section of the first of the section of the first	Auto: Set		oraz uniak	- -			100 4 11 14 15 15	精度 温度 特殊	原語詞 计分列	海岸集革命%。
VES Concentrat		Influent (Diluted)	- Comments		nfluent (Ur		2249	ppm	Effluent 1.3	<u> </u>	ppm
Monitoring Devi	ce : A Sale (Sale)	MENT B	AC ZO	de medical artist of products began	d Constant a - Liberto Office	t e instrumbiguis.	Calibration	(type/date) ( Oct	Trable to - Language and Company of the Company of	1021.0	t vata vatar vatar da aktivita ilikologi a Attentara Ali
A TABLE	和中国新作为国际		VAPOR EXTRA							and the second second	ssias Hexane
WELL NO.	- Well Interval	Status O/C	"Vacuum ("wc)	Conc. (	pmv)		wc) ( an	Temp (Deg. F)	Flow (scfm)	A A CAR	Well Screen (ft) 8 to 28
BVE-1	Shallow Deep	100	47	495	7	Tarange.	description of		ten average and all the		95 to 55
	Shallow."	100		-110	_		en arbie beg				7 to 27
SVE-2	Deep'	100	47	3523	5		Control A		<b>对是所知为中心智能</b>	75 97 (2)	35 to 55 ·
SVE-8	Shallow				-	<b>公教等</b> 信		Maragarana Mara	TO SERVICE OF THE SERVICE OF		8 to 28
	Deep	100	47	3189	1	langel Marie Santagal Para		如此多数是写作的。 多可能是图像《香油等			> 25 to 55 · · · · · · · · · · · · · · · · · ·
SVE4	Shallow Deep	-0	47	829		表基础的。		TATELON OF THE STREET	THE CASE OF THE PARTY OF THE PA	TANK SPE	(1.00 35,to 55 /±% i
	Shallow	100			·	<b>网络</b> (1)	特性素质	(A) graph (Page 2)			6 to 28
SVE-5	Deep ::(۱۹۱۱)	100	47	244		间相信外			<b>新疆外部的旅游</b>	WAR THE	34 to 56 😘 🐧
MW-A7	Shallow, I	100	47	128	4.	Charles and a second and		Tan Brazella			jo 10 to 30
<b>海川河疆水平</b>	A Deep ***	为ESAY的证据的证据		is and department The Court of	A STOCK	Property of the San	OIGNOTEN	of the state of th			35 to 65
VEW-2	Shallow, 3	""。 公司,"在20世界的研究的		-		NECTEDIT		Standard and Employed Standard Standards		<b>公司物源的设备</b>	
arte de la companya d	Deep	等20mm 1966 经均益			***********			***************************************	<b>以那种信用的地</b>	COPPEN.	34 to 54
		主题。而其實施的數學				VECTED T		在論語時間的思慮	"語。單時就是,特別實施	编译(编辑)	29/31-17 to 47.1 小小
<b>对智慧教育</b> (1)		20.12.18.18.18.18.18.18.18.18.18.18.18.18.18.	<u> </u>	AIR COMP							
Air Compressor	ON/OFF	B the section of t	ressure !	-Line	Off-I	-ina	Chang		eoNò Chang	ged Oil?	Yes/Np)
神经動作 图片		(p:						174	<b>公司</b>		en - Carrello a regionale de mare
产物的解析的人员	re in the relation of the second of the seco	AIR SPARGING	SYSTEM MONITO	RING		Tent H			COMPLIA	NCE :	
POINT	NUMBER	Flow (scfm)	Pressure (psi)	Section 15, Physical P.	Cycle Off	Cycle Op			TE VES UNLESS C		
<b>分數於數字</b> (5)	AS-1			and the second s	2:20 AM -	12:00 PM			rmit Posted?		Yes/No
100 2°	AS-2			; 2:20.AM)	4:40 AM	11. 2.34-1.1.2.4	,4:40 PM	Section 1 per control of the property of the last state	e≰300 SOFM?		Yes/No
	AS-3			4:40 AM	direct and a second second	16:40 PM)	1,1977, 18. 11. 44.4534	distribution of the second standard and the	e >1,500"F7 ()		Ŷèε/No Ŷèε/No
SMF4 4 6 1	AS-4			7:00 AM		/19:00:FM	State of the parties to be and	A TO COMPLETE AND A SECOND SECURITY OF THE PARTY OF THE P	0 ppmy (as Hex)?		XBS/No Yes/No
3 1 1 <b>5</b>	AS-5:	· .		9:20 AM				Copies of L			
			M. A.	ONTHLY/C	ERTIFIED	WAPOR'S	AMRLING	VSIS AND SAMPLIN	GICONTAINERS	PEFFLUEN	IT LIMITATIONS
NOTE: Inlinent and Effluent Samples must be	Collect	Sample			Tri	TP		BTEX & Standard		THE STATE	出版和記述的表示。
collected within 15	Sample	Collected?	Sample Date	Sample	ime		15 Mod.	Oygenates EPA 8260B	EPA 410A	VOCs	=50 ppmv
作 刺类植物器 地区对		vee well				EFA 60	1 Tedla	L			REPORT AND A SECOND
Influent	Monthly/	YES/NO)					1 Tedla		1 Tedlar Bag	⊮Benzen	e = 0.24 ppmv
Effluent	Monthly	123/65	- Colors		M. A	skovičkom štr				Helingi dipipili decape	rull
STATUS DEPAR	and the second s		(CM)OFF	concessory 44-2-interconcessor		中国的特别的			emptyy		1411
1		ns, recommendation		_ F		- ~~ A	<b>V</b>			n	. 4
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BYD C	o we the	o ALL	DATA	54	STEA	لصل	as (	<u> </u>	HA BELE	<u> </u>	<u> </u>
<u> </u>	-	AMOONOO	50000C 5V/7				***************************************				
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Chipsteers : 1500	ON THE STATE OF TH			************	*********		Marin Marin				Tabritis, Habita Stablisha 77		
IENT/SITE	AS IN THE VEREN	Atlantic Richfield (	Company Station N				海绵海	Unit: Para	gon Enviro	nmental Sy	stems ET-25	D	
ADDRESS	<b>洛林市铁宝宝</b>	5731 East Fireston			ifornia		ATT PO	ermit No.: SCA					***********
TECHNICIAN	which called	initials: RNEW	IBERRY	翻想源	Date:	10/29		Week	47 to 79 th	ars	Time:	09:0	20
ARRIVALISTAT	Us:0.23 h	<b>⊘</b> M/OFF	DRERA	ring Hour	(S: 1 <sup>1</sup> /2)	4	181.0	) 正装 可加Alar	ms:	YOUE.			
TUTILITIES	<b>对加盟加盟的</b> 數	Gas Meter		27	431	ofm / therm	Electrica	Meter	90 10 A		2	6814	KWh
場關係機能為對於		<b>建的时间地域</b>		和成品 增	BLOWE	R.SKID		Will distribute	<b>扩</b> 数据单	無他常學的	學認識問	<b>那</b> 。1945年	<b>建制器</b>
	為自然的制度物理器	Process:			151	<u> ን</u>	Post Cat.:	Leberro	all man skill for 2.15	resultantia Mandalah	1	1513	°F
		tak mili pistimat namuskaid	scfm Sin HBO AP In Si			art Paper?		s/No Pilit		d Vacuum .		<u>[ōŌ</u>	
Effluent Flow (	ow (Pitot Tube)	Process and a	Min Higo AR:								an neithbeatal		scfm scfm
Blower		Amps:	So a hashing reselve i finish tops a Militalia	20		Lubricate		Carlo Carlo Managar Carlo Carl	nge Oli?	district the second of the second	Belts OK?	STATE C	Yes/No
Dilution Valve	[2] [4] [4] [4] [4] [4] [4] [4] [4] [4] [4	Auto:		·		O‰open	1					<b>G</b> %	open
LEL Reading		Service	<b>省和1990年198</b> 0	a Pauli	NATE OF	1.0%	PAXANTE SI	<b>国际</b>			H. Partie		%
VES Concentra		Influent (Diluted)			Influent (L		0-111		opm Efflue			<u> 20.7</u>	ppm
Monitoring Dev	ice is the comment	MINIRAE	LOOO P	di American	na vendelsana	elektri lekel	Ualibratio	n (type/date) 🕂	LKAWC	AND DESCRIPTION OF THE PROPERTY OF THE PROPERT	AND DESCRIPTION OF THE PERSON NAMED IN COLUMN TWO IS NOT THE PERSON NAMED IN COLUMN TWO IS NAMED I	<u> 3/02</u>	The Real Property
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	Shallow	- <del></del>	- account ( arc)	W. Solio.	RELIES	EL MENTES	The second second	Harry Coes	ters discon			B to £	** - 4 2
SVE-I	∵ ¹Deep ்	100	100	71	do.	ident (1)	人物,制度					ქ⊍ქ 35 to	
SVE-2	Shallow	7				<b>非洲的</b> 类	18/10/2018	AND STATE	and 建碳 1.0g	digital in the	<b>科学的指令</b>	33 11.77 to 2	27:
	Deep	100	100	35	87	Constant	推進的數	を	ma arest	estro e		185 to	
SVE-8.	Shallow	\^ <del>0</del>			نسو	STATE OF THE PARTY						8102	
間に開発的機構を含む。 「通過は「概念を関する)	Deep Shallow	<u> </u>		il	<u>.5</u>				的复数 医水原			351to	** 101 ° 17 9
SVE-4	Deep	100	60	9.	9	<b>建筑和发展</b>	wealing.		Karana a	barat alba		e 35 to	
SVE-5	். Shallow.≗்.	ф	**************************************			<b>建设理场通过</b>		<b>医神经</b> 常以遗迹。	PARTIES.	<b>供证的影響</b> 观	<b>"古里"</b>	71 0 6 to 2	
	ј Dевр 🦫 🦠	<u>।००</u>	රව		-2	非特殊政策	地位。時期,	支票的领导的	S. Politika		The Albertain	34 to.	
MW-A7	Shallow.	100	<u>60</u>	88	1.1 1.10 4.1-07-1	<b>建工作的</b>	<b>人名伊斯德</b>	11. (11. (11. (11. (11. (11. (11. (11.			n street and	: 10 to:	
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VEW-2	Mid	TANGETE STEEL STEEL STEEL STEEL		1 -1	757 041 7 7	NECTED T		marana katan a Midan Sababata	CAPTER SE		<b>医性病的病。因患者</b>	4 10 12 to	
	Deep N	可以供以認為對關係						MR SE SE SE		and the	Was Tilling	:::::34 tō	
/44 / <b>D-8</b>	1977年1899年表現	<b>网络阿特斯特</b> 斯特	<b>"应用的多项类的数</b>	制制的	NOT CON	<b>МЕСТЕ</b> ВЛ	O'SYSTE	N Market 1970 Parket	學學院對於	型 医二甲酰甲基	<b>新加州市</b>	7 to 4	47.8
THE THE PARTY OF						MAINTEN			H HE MOSE	游戏作的	加斯斯智利	性特別以於	garda
Air Compressor	ONO	Tank Pi	essure:	-Line	On-	Line	Chang Flit	jed Air er?,	Yes/No	Chan	ged Oli?	Yes/	<b>9</b> 0
		AIR SPARGING	Perigraferodija Silve grater sprykov utet se trege SOV STEEN UKANA	TENERALISM UDINOTER	ne salabih	D. Salas Santi	Charles on			SELECTION OF THE SECOND		CHAVAIN	NAC STATE
in the second	water Arts & September 2 were be-	Flow (scfm)	Pressure (psi)	Alleger and the Post Co. A.	LOVE OF I	-Cycle On	Particular Off			COMPLIA	品加加加州共和		
POINT	AS-111		1 10000(0 (pos)		2:20 AM	12:00 PM		DO NOT OPE	Permit Po	***************************************		(e)/No	ISFIED
2	AS-Z	/	<del>/</del>		4:40 AM	14:20 PM		VES Flow		A Charlett and Charlette about		€9s/No	
3	AS-3				7:00 AM	16:40 PM	7.00 PM	Tempera		2007,000,000		Yes/No	
4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	AS-4	/		7.00 AM	9;20 AM	PROFESSION AND ADDRESS.	9:20 PM	Effluent VOC	and the second of the second			Yes/No	
	AS-5 (	1	/		11:40 AM	9:20 PM	S. or it will be such that	Complete State Company of the Company	TARREST AND COLUMN	Processor and Company of the Principal		Yes/No	
Marijaningan and a		alimittead et partie et et et. October 1 october 1901 et et.	of distributed the first property	at the state of the last	4. 4. 4. 4. 4. 4. 4. 4.	A THE STATE OF THE PARTIES.	7 CAL CAL CAL .	The section was a section of the sec	mit of charters had a	sail annealt a minter if menne			yaqaan araasiy
NOTE: Influent and		SENSION OF THE PROPERTY OF THE PARTY.		And S.W. L. S. Bland St. Print	Lat Villi (Karle)			YSIS AND SAMP					
Effluent Samples must be collected within 15	Sample	Sample Collected?	Sample Date	Sample	Time	TP	Hg	BTEX & Stand Oygenates	ard B	enzene	<b>建筑</b>	iris nega	
minutes of one another.	Sample	Collected	•			EPA 80°	15 Mod.	EPA 8260B	<del>- -</del> E	PA 410A	SE VOUS	. <b>≡</b> ,50 ppr	ηv
Influent	Monthly	YES.					1 Tedla	ır Bag	1200		41.0	都性階級	<b>经数</b> 。"
Effluent,		YES(N)					? Tedla	ır Bag		edler Bag	Benzen	= 0.24 p	
STATUS DEPAR	TURE:	**************************************	ON/OFF	***************************************	***************************************	群的基础	(A) (A) (B)	Drumsi	0.000.00.00.00.00.00.00.00.00.00.00.00.	empty		***************	full
West graph to the day of the programme	CHECK THE STREET, AND ADDRESS OF THE ADDRESS.	ns, recommendatio		***************************************		page (Synthering) Auf	o, communication (CRE)	भुक्तान्यक्षीतेषुः अत्र स्टब्स्टिक् <b>ष</b> -		Az			
		Did.	OÈMI	and c	olle	tecl	data			· · · · · · · · · · · · · · · · · · ·			
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		W. J W. J. J. W. L		<del></del>		***************************************		7.000					
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					SITE INFO	RMATION			Marie Company	***********	<b>指导的国际运动连续</b> 工员
LIENT/SITÉ		3	Company Station N				· 【如本、唐·昭等 等 · 1845 PM 2006	Marking to 6 1940, 125	Environmental Sy		
ADDRESS	ANTENNA SYNTHE	5731 East Firesto		25: 079 Sept Comments	Control Service Service Co., No.	"ســ ده ال		Laborate visite Section Section	D Permit-to Operat	The section of the section of	
TECHNICIAN	Children and an extension of the second		ul N	~~~~~~	Date		1-036/	Weekday	1	Time:	9:00
ARRIVAL STAT	US:	ONJOFF		TING HOU	***************************************		<u>55. 5'</u>	Alarms	6	C - 1	1215
UTILITIES		Gas Meter 1	<u>2.3</u>	1289	Carry Carry Congress College	cfm / therm	Contract of the Contract of th	/Meter in the second	27	103 AV FUNDA SANA AND AND A	KW
				ALC: UKE		R SKID	<del></del>	Property and the second	的問題指揮指揮 生化		
Temperature		Process:	· *** See note	. La talka ili se la constanta	15/	<u>3</u> °₽ art Paper?	Post Cat.:	MAIA BARRISTAN	Manifold Vacuum.	a	<u>/57.7 年</u> 伝会 "H <sub>2</sub> O
Process Flow Source Well Flo	ut/OHot/Tubel	Platenta sociolos.	ノフタ scfn はIn H2O APには						riow:	A CONTRACTOR OF THE CONTRACTOR	<u>රුවා "H₂O</u> /74 scfm
Effluent Flow (F		Rin Walland			(C. 1) 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		described the control of	Effluent	CTTON, ALEXANDER	<b>市場的程序部</b> 為	
Blower	Self-field Technical Conference (I.S.	Amps:	igold settle to € to 1 in epigmid, elitori	Cost real SPANS (2.8			1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	YesAlo Change	The second of th	Belts OK?	
Dilution Valve		Auto;	. ####################################	Co	.xcr	%срел		:			%open
LEL Reading		Set 1	<b>国的特别的中国</b> 新疆	MAINTE		100 10 12		in the little of	Ballia and Alberta	地特別的	. 情况对于证据 <b>%</b> 。
VES Concentra	tions , ki j	Influent (Diluted)		mqq	Influent (L	Jndiluted)	<u>64</u>		Effluent		4,5 ppm
Monitoring Dev	ice		MA	MIPA	-		Calibration	n (type/date) /C	20 400	1	409
		Jeff Salkshill	VAPOR EXTR			<b>加州的</b>	o critical	antifector second	The state of the s	reading exp	ress as Hexane 🖟
WELL NO.	Well Interval	Status O/C	Vacuum ("wc)	Conc.	(ppmv) 🚉		("wc) 🗓 📑	Temp (Deg. F)	Flow (scfm)	DTW (ft)	Well Screen (ft
SVE-1	Shallow		60	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		湖海沙漠		de esta esta esta esta esta esta esta est	Table Child	THE WAR	∰ , 18 to 28 . '\
CAN ME STATE	Deep	100	60	93	<u> </u>	<b>国际专业企</b> 员			Asimonia di di	<b>和巴斯斯瑟罗</b>	35 to 55
SVE-2	Shallow	122		1 2	- ATT. 74-72	Parket Server		· · · · · · · · · · · · · · · · · · ·	i proteination and a com-		7 to 27
i selektrologiska od 1995 i 1992 Sklaktrok osa 1919 selektrologi	Deep Shallow	100	60	1/.>	87	I PARAMET	经现金分别的代 1.加格斯特的			Frank Francisk Fr	8, to 28
SVE-8	Deep 1	100	ලිව	7	75	1000 PM	· · · · · · · · · · · · · · · · · · ·	The Control of the Co		PARTITION OF THE PARTY OF THE P	35 to 55
	Shallow	100	F-567		7	deres are in		7-11 - 1-10 - 10 - 10 - 10 - 10 - 10 - 1		A . W. 21. CT. 4	"
SVE-4	Deep	100	(m)	2	83	用機器議場		<b>建筑等是</b> 海流。		Not that	(1) 35 to 55
Soverie 11 5	Shallow				-	内斯斯特	State Colored	<b>"你说我这样</b> 事情,	<b>"你们都有的变形。</b>	1100	6 to 28
SVE-5	Deep	100	60	57		18456	快勤性型的	是解析。特別所們	"克里斯斯特别。"		34 to 56
MW-A7	Shallow	100	60	14	6	The street	洲洲洲麓	1000年11月1日	·特斯里斯里的	See Area	/10 to 30
	Deep	NEW WINSHIELD	自動學物質的對於	位的影响。		<b>有数数数</b>	的學科的	The Market Sec.	<b>清阳</b> 25 元5 元	[4] (数/A.B.)	35 to 65
	Shallow	<b>美国的</b>		4		INECTED 1		e A in the relience College Commercial		Market Street	1 4 to 7
VEW-2	Mid à	Teleforensen in die erste im Erste beschiede beschieden		132.00		INECTED T				職に関係する。 32 名のMin 5 5	34 to 29
			and of the day by the day. However, the control of	2013年6月2日 2013年5日 日本公		INECTED T		Contract Con	somen semboren sen Sa bredialbar kolonik	Christian Inc	7 to 47
Walking to a				AIR COM		MAINTEN		ASSESSE SALAR VALL		<b>建设设施</b>	ON TO A WAR SE
Air Compressor	ON/OFF	Tank P	ressure!	n-Line		-Line	Chang	ed Air. Ye	s/No Char	iged Cli?	Yes/No
	TO A SECURITION	NAMES OF THE PARTY	。 1美数数据数据	de represident	] (3.6%, 1944, 1942)	1. 1° baj ag 1. 1°1			では、 (大学などのでは、1994年) (大学などのでは、1994年)	的可能的激素更多的 1985年1988年1986年1986	
TANGTHAND CALLAST S NACHAMBA	· 克尔克斯 (1986年代教育) (2015年 - 2016年 - 1987年	T	SYSTEM MONITO	Terrational (Division	(1980) (1.16) 1. (200) (20)	g'r ing said Track is	TO TO VICE THE		СОМРЦА		
Anna In the second of the second	(UMBER	Flow (scfm)	Pressure (psl)	111 TO 121 TO 121	Cycle Off	and the state of t	, Cycle Off	The first of the least of the second	TE VES UNLESS		
1 10 5	AS-1			and the second second second	2:20 AM	12,00 PM			rmit Posted?	·	Yes/No
2	AS-2		1	2:20 AM				*************	e <300 SCFM?	<u> </u>	YesiNo
	AS-3	23		4:40 AM	7,00 AM	16:40 PM	7:00 PM	P. Commission of the Commissio	e >1,500 °F? :::	3	(Yes/No
	AS-4			7:00 AM	9,20 AM	19:00 PM	9:20 PM	Effluent VOC ≾5	0 ppmv <sub>i</sub> (as Hex)		YesiNo
5	AS-5 📜			9:20 AM	1140 AM	9:20 PM	11940 PM	Coples of L	ogş⊦On-Site?∵ ै		Yes/No
appearance in the second of th	kale ozer er er er kaleját álatológia. Den egyi a kelete feletett felyett a	erillis ledicina depretation de la compa	e e lega en esperante de la N	MONTHLY (	CERTIFIE	VAPOR'S	AMPLING	inter Leaving a proper manager of the property of the property	ran ing pagan ngga nggal na Kanggangangan nggal	All Marketines	िकेद्रों दें, ग्रह्मा कार्या है के हैं। यह कि कि वह है एके अपने पहले की कि के कि कि कि कि कि कि कि
NOTE: Influent and	PX SPARING							YSIS'AND SAMPLIN			NT LIMITATIONS
ffluent Samples must be collected within 15	Collect Sample	Sample Collected?	Sample Date	Sampl	le Time	TF	'Hg	BTEX & Standard Oygenates	Benzene	1000	s = 50 ppmv
minutes of one another		Collected				EPA 80	15 Mod.	EPA 8260B	EPA 410A		s – ou ppiliv
fluent	Monthly.	(YEB/NO					1 Tedla	r Bag			Part of the second
ffluent	Monthly	(YÉS MO					1 Tedla	r Bag	1 Tedlar Bag		e = 0.24 ppmv
STATUS DEPAR	The state of the state of the state of the		ON/OFF	J		The street Easters		Drums:		<b>國際企业等等中央企业等</b>	a of College May and
enter i par la paga saya pri i gilar	25 31 c c 25 min 24 Car 4040	]		***************************************		West below the service of the servic	性相称指数的	នករត់ប៉ីខ្មែរ។	empty	<u> </u>	fu!l
Notes: List all act	livities, observetic	ns, recommendation	ons								
17. 1000.dk		NOS	6-191-	N.A:	25						***************************************
	***************************************		6-0916 WR 677	<u> </u>	سحت						
		<u> </u>	14507	<u> </u>		<u> </u>		PARAMETER   1			
	,										
II O&M activities	must be condu	cted every seven (	lavs or sooner or	less other	wise indic	ated by a '	(Monthly)	" note.			Market and the Control of the Contro
							,				

				noVaror Extraction M	•							
TERRITOR INTER	Air Sparging/Vapor Extraction Monitoring Log  SITE INFORMATION  JENT/SITE  Atlantic Richfield Company Station No. 5110  Atlantic Richfield Company Station No. 5110											
folkstern (SS) in the APVA A		Atlantic Richfield C	2003 E. D. W. T. W. W. T. W. W. T. W. W. T. W. W. T. W. W. T. W. W. T. W. T. W. T. W. T. W. T. W. T. W.		eithean-Anathrache media	Unit: Paragon I						
ADDRESS			e Boulevard, South		A STATE OF STREET AND A STATE OF	rmit No.: SCAQMD						
TECHNICIAN		Initials: AUS U		Date:	11.12-04	Weekday:	FZI	Time! 0700				
ARRIVAL STAT	Annual of the second of the first	ØN/OFF		ing Hours;   project		Alarms:	<u> </u>	**************************************				
UTILITIES	(1) (1) (1) (1) (1) (1) (1) (1) (1) (1)	Gas Meter	24255	C	fm / therm  Electrical		29294		KWh			
	的思考。在195 <b>年的</b>	<b>非洲洲洲洲洲</b>		BLOWER	RSKID # 37 JA		The way to be the	etempee is in 1912	標時間			
Temperature	原的原物法實際	Process:	15090		PF Post Cat.:	<u> 1508</u>	करण कुटुमा, कुटुमा, कुटुमा, कुटुमा, अस्ति होता । स्टब्स	, M G	°F			
Process Flow		<u></u>	scim	Change Cha	nt Paper? (es/		anifold Vacuum.	<u>62</u>	"H <sub>2</sub> O scfm			
Source Well Flo	w (Pitot/Tube)		"IN H₂Ų AF. IN H≥O AP.		Temp.	Effluent I	low: 50 17		acimi			
Blower Blower	the state of the s	Amps:	27	.5 A	Lubricate?	Yes/Mo-Change (	Oll? ™ Yes/ੴ		Ĉes/No			
Dilution Valve	<b>计和中国规划程</b>	Auto:		<i></i>	%open Manual:	0			open			
LEL Reading	6.04.00.00.00	Set Harris	是抗毒和多质液法		ANTE NO PART THE	品种类型型的形式		<b>罗斯斯斯斯斯斯斯斯斯</b>	14.			
VES Concentrat		Influent (Diluted)	Particular and the second seco	ppm Influent (U			Effluent 3.0	1	ppm			
Monitoring Devi	ice 1	MINT PA			Calibration Calibration	(type/date)\oo	DDH Hex	eading express as Hex	i Batili			
		greene it de door en seel Ste de greene affelende vo	VAPOR EXTRA	MARKET SEL TO A COMMENSATION OF THE PARTY OF	ΔP ("wc)	Temp (Deg. F)	Flow (scfm)	DTW.(ff) Well Scre	Carp. " Set Little			
WELL NO.	Well Interval	Status O/C	svacuum( we) s	∦ Cons (ppmγ) ∮ ⅓				8 to	4.1			
SVEH	Deep	100	62	96.7				(4) (4) (45 to				
	Shallow :	<del>(0)</del>			副的學是類別能的	新超级增加	開始學門第2月19年4月19	[]	27周末。			
SVE-2	Ocap 🔧	100	62	<u> </u>		<b>的图象图制设计</b> 图图	AND HOUSELESS	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				
SVE-3	Shallow	-0		, , , , , , , , , , , , , , , , , , ,			gadinariany is	8 to 2				
	Deep	100	67	21.8	· 中央公司 1997年1997年1993年 日本日本日本日本日本日本日本日本日本日本日本日本日本日本日本日本日本日本日本	30.00 00 年,1966年3月 新春年3月1日 (1967年)	Magnification of the second of	7 to 2				
SVE-4	Shallow:	100	62	21.2	Carling to the carling of the carlin			35.to				
-446 1945 Sec. 5	Shallow	-0-			70 (1 <b>李</b> ) (1 ) (1 ) (1 ) (1 ) (1 ) (1 ) (1 ) (1	<b>福克科特的</b> 中文	傷。此連絡。保险量	The 16 to	28			
SVE-5	Deep //	100	h2	16.S	The harden with the	理性初的學樣的經濟	<b>可能的自由的</b>	34 to				
MW-A7	Shallow	GOI	<u> </u>	GU 73-73.6	Tagging At At		girth (1965) and (1966) was a recommendation of	15 10 to	**************			
Military (c)	Deep # 10	等的数据的特殊的 10 mg		I NOTON	NECTED TO SYSTEM			35 to				
VEW-2	Shallow Mid		· 打架。对方的形式的表面形式 · 现在中国和古里中联盟中		NECTED TO SYSTEM			11 12 to				
	Deep				NECTED TO SYSTEM	and the second of the second o	<b>新以开始</b> 的标识字	34.to	54			
D-8			流过 海岸级 华新竹	NOTICON	NECTED:TO;SYSTE)	ne and the second	病性等抗病(治, 13)。	非常使用。有:我多7.10·	47			
				AIR COMPRESSOR			物的性的高度性學		(學)。清			
Air Compressor	ON/ØFF	Tank P	ressure On	-Line Off-	STATE OF THE PARTY	ed Air Yes	√Nc) Chan	jed Oil? -	<u>1</u> 2			
	On en	(p	si) sip iii		FILE CONTRACTOR				-			
	1. 7a, 8 - 867, 3a	AIR SPARGING	SYSTEM MONITO	RING TO A STORY	為。從傳作關係		<b>∥</b>	NCE TO THE STATE OF THE STATE O				
POINT	NUMBER	Flow (scfm)	Pressure (psi)	Cycle On Cycle Off	Cycle On Cycle Off			ONDITIONS ARE SAT	ISFIED			
\$1000 (1) (4) (4) (4) (4) (4) (4) (4) (4) (4) (4				112:00 AM: 2:20 AM	12:00 PM 2:20 PM	Current Per		⟨₹êš/No				
100 July 2	AS-2			2:20 AM - 4:40 AM (	14:20 PM 4:40 PM	VES Flow Rate	to the state of th	&es/No				
3	' AS-3'	25		4:40 AM 7:00 AM	16:40 PM 7:00 PM	i Temperature	Sub-Hill Controlle Keiter and Charles and	€es/No				
110.434	AS-4.5			7:00 AM: 9:20 AM	19:00 PM: 9:20 PM	Efficient/VOC <50	S. S. D. S. olle D. S. Roy, Sent T. Mark. Sect 15.	YesiNo				
	AS-5			9:20 AM1:40 AM	9:20 PM   11:40 PM	Coples of Lo	gs:On-Site?	∕€s/No	nanananananani):			
With the		<b>的特色的影响</b>	M. State of M.	ONTHLY CERTIFIED	VAPOR SAMPLING	化,被压缩的影響	国 解 著 智 特 制	16年的18年18年1				
NOTE: Influent and					REQUIRED ANAL	YSISTAND SAMPLING BTEX & Standard		PEFFLUENT LIMITA	TIONS			
Effluent Samples must be collected within 15	Collect Sample	Sample Collected?	Sample Date	Sample Time	TPHg	Oygenates	Benzene	. VOCs = 50 pp	mv .			
monutes of one another					EPA 8015 Mod.	EPA 8260B	EPA 410A		TOTAL N			
Influenti	Monthly	YES/NG)			1 Tedla		CONTRACTOR STATES	Benzene = 0.24	vmac			
Effluent	Monthly	YES/NO)			1 Tedla	-	1 Tedlar Bag		r taging a Residence			
STATUS DEPAR	RTURE:		ON/OFF			Drums:	empty	· ·	full			
Notes: List all ac	tivitles, observatio	ons, recommendation	ons		-							
	TEN WAS	•		REVAL D	ED OLL	, coller	EN ALL	DANA				
aus			C044001	10 545K	en Cas	m.) 3	toa <u>cao</u>	2017/16C				

	SECOR International, Incorporated  Alr Sparging/Vapor Extraction Monitoring Log												
Section of the National Section 1997	en e o o o o o o o o o o o o o o o o o o	Constitution of the Consti					to a sale of heaving	o de compareban halifallh	an er fin hann i sterre	eristadionisi (1907	eningang properties	idlig (RALTIGAL)	ling willer
TALLEWALL		The state of the s	2000年6月		ITEINFOR	MATION	Shirts and South to 2015					Wall William	" Mhi raistige
ULIENT/SITE	医医类性 拉氯 的复数线	Atlantic Richfield C	` -				131,20 January	Unit: Para		2017			
ADDRESS		5731 East Firestor		1	The second of the second second second	1		rmit No.: SCA	24.00°C 4		A COLUMN TO LA COMPANY OF THE PARTY OF THE P		
TECHNICIAN	to the fee of the second of the second	Initials: TON		1000000	form from Carles and find			Weekd			Time	noo_	
ARRIVAL STAT	US:I.	ØNOFF	4-3 mark 1-18 at 1 1 1 1 1 1 1 1	ING HOUF	. d * to 1 and 11 all * to mean fit 1	465		Alam	CONTRACTOR OF THE PARTY OF THE				KWh
UTILITIES	a Pigara ayan an ing	Gas Meter					MANAGEMENT OF THE PARTY OF THE	Meter 10	necessia de la consessión	<u> </u>	i de la company de la comp	Siferviewski)	15 T 10 T
				<b>深外信息</b> 部扩展	BLOWE				NOW WATER	Personal production	STATE OF STATE	PERMITTAL PROPERTY.	* <b>F</b>
Temperature		Process: 15 74	ectm	a di ve	hanne Oh:		Post Cat.:	/No begovi	Manifold	Vacuum.	115		"H₂O
Process Flow Source Well Flo		168 Profession									<u> </u>		scim
Effluent Flow (F		PHILIPACTURE TH	in H₄O ΔPSUS €	and Line	lin H₂O	Temp://T	<b>斯勒福</b> 爾	华龙龙 st Efflu	ent Flow:		MACE VAL	關聯的	scim
Blower	9 (1994) 1 (1994) 14 (1994) 12 (1	Amps: 26.4				Lubricate		Yes/Ne Chan			Belts OK?	松排門(	Yes/No
Dilution Valve		Autora Gasect				%cpen	Manual: C	closed_	TRACTION ACTUAL TOWN	name at manufactures 20	acolamicka a P.C. 150	4.1	6open
LEL Reading		Set									election	<b>新建设的</b> 26	11. <b>%</b> : * *
VES Concentra	at the second transfer of the second second	Influent (Diluted)		ppm ppm	Influent (U	ndiiuted) (			pm Effluen	·	2 = 0 . 5 C	3.0cq	ppm
Monitoring Dev	and the state of the angle of the state of		7.000 VAPOR EXTRA	Heropresidador		ana ya kata a	Calibration	n (type/date) <u>(/</u>			eading expr	alias it et cateri il co	STUDENT OF
Teamer as a second			VAPOK EXTRA	1 -2 -2 to 5 to 1 to 1 to 2	(ppmv)	To the second	wc)	Temp (Deg.	F)   Flow	(scfm)	DTW (ff)	Well Scr	
WELL NO.	Well interval Shallow		in sacinitifi me)	CUIC	ibhina)			THE CONTRACTOR	voc de cons		34.24.00000	etagent, newspaper.	28
: BVE-1	Deep	100%	હે <b>ં</b> ધ "	108	>	测解析 (數學)				法遗传的	Sant Will		55
and the second	Shallow ( i	clones			2	<b>100 推翻</b> 器	galetelen sam galetelen sammi	<b>湖北海山</b> 湖 11	<b>基层温度</b>	病性的 把针	The and the all	7 to	27
SVE-2	Deep S	100%	64"	149	6	4.1000000000000000000000000000000000000	al market	HER IN SEC.		等基度 计制	· · · · · · · · · · · · · · · · · · ·	35 to	
SVE-3	່ Shallow*∷,	েতেও এখ	600 				<b>李素等</b>	<b>国际国际和广东</b>			Suid Suid	8 to	
	Deep	100	64"	271		THE RESERVE	The location			<b>经投资的</b>		35 to	
SVE-4	Shallow	Closed	**************************************	179 ( ) (	· .		等的是"自然的"。	Patriste   Table   Patriste		KUMPUNA ANG Inggalahan M		/ 35 to	27
	Deep Shallow	100% Closech	<u></u> <u>6</u> 4"	34.9	1	ATTENTION TO A STATE OF THE ST					1.19 4.11	3 6 to	
SVE-5	Deep	100%	७५५	66.	ía.		San Property				on Consequences in	34 to	
Value III.	Shallow	100%	64"	15		Salarani Salarani		100 TO 10	<b>推定的</b> 在10	Alabania in	河南湖沿 湿	. 10 to	30 14
MW-A7	Deep 🖖 📜	當例為中華經濟學	机型型常数系统	7000年度	<b>随</b>	的學術學	医腹部 冷	<b>生物。指於</b> 的	海海海海	5.制度360円	<b>计数据标识数</b>	35 to	
	Shallow	果如為語學。由關係	Control of the Cartery of the Control of the	HARIMENT.		w.nagananananananana					Comments and	# 4 tc	
VEW-2	Mid								計劃中國的政策 ····································	Principal Single Angles (Angles Singles		12 to	**********
D-8	Deep		15. 共享			NECTED T NECTED T		The same transport of the first of the same of	可以可以提出的主义。 可以中国的特殊的言义。	userialistik Userialistik		504 7 to	
AD-S			and some services and the services of the serv			MAINTEN			harita single	MANAGERY.		Table 18	
t Marie - Balance - Allender	2000	A STATE OF THE STA	Or	-Line		Line		ed Air		物的性質			
Air Compressor	ON/QFF		ressure si)		-		PW Fift		Yes/No	Chan	ged OII?	Yes	'No
<b>阿勒特例</b> 集。 第55	A State of the sta	Mary Films		CG managana	1165 N. 187 - 189 S	o resultados ilitario	PRESIDENT Simulation	rightsparker Total biological colores	ration discoveryates	(A) 1884年(1980年(1984年)	を できた。日本に 1994年 ・ できた。日本に 1994年	on adjournment	Service (VIII)
	The second second		SYSTEM MONITO	Allert Company of the left	的 計畫課 1850年186			A SALAR		COMPLIA	<b>计系统编码</b> 计基		
POINT		Flow (scfm)	Pressure (psl)	Cycle On	telephone in a moneya		Cycle Off	DO'NOT OPE	RATE VES Permit Pos		CONDITION		risfied.
The state of the s	AS-1 ∯ ∜	666	<u> </u>	12:00 AM	2.20 AM	12:00 PM	2:20 PM	1 1 descriptions of a single t	Contract to the contraction of	and make and the state of the s		Xes/No	
2	AS-2			2:20 AM	4:40 AM	:j14:20 PM	4;40.PM	VES Flow	71 11 11 11 11 11 11 11 11 11	the fall florable side		₩ <sub>0</sub> /No	
3	AS-3			4:40 AM	7:00 AM		-;7:00 PM+	Tempera	er a de land en derleit v.			€9/No	***************************************
4	AS-A			7:00 AM	9:20 AM	19.00 FM	12 Table 64 24 11 12 2	EffluentWoC	in the property of the standard of	the production of the same		<b>⊘</b> s/No	
4/25 / 51*	AS-5 🖟 🖟			9:20 AM	.11;40:AM		14.40 PM	Copies c		and the record of the rest	District Make Connec 12	<b>∕eŝ</b> /No	. 92 <b>6</b> 6 96 91
		Market Belling	A PARTIE N	ONTHLY	ERTIFIED						<b>沙斯斯斯</b>		GE HERE ALL AND AND
NOTE: Influent and Effluent Samples must be	Collect	Sample		ŀ				YSIS AND SAMP BTEX & Stand	ard		TARGET SE	NT LIMITA	AIONS A
collected within 15	Sample	Collected?	Sample Date	Sampl	e Time	TP	'Hg	Oygenates	De	nzene	*ij Voc	s = 50 pp	mv 📜
indinutes of one another					,,	EPA 80	15 Mod.	EPA 8260B		A 410A	等標情等病质		
Influent."	Monthly	YES/(ID)					1 Tedla	ar Bag		and the	Benzen	e = 0,24	ppmy
Effluent	Monthly	YES/(O)					1 Tedla		1 Te	dlar Bag	MASS 454170 WOLLD		Mark Part of
STATUS DEPAR	RTÚRE:		ONYOFF				产品。 金、西省大会	Drums:	0	empty		2	full
•		ns, recommendation							. ~				
systec	4 6005 6	ip Site 9	was Cle	البري	<u>eru</u>	1 - is	nb #	o Date	<u>, leki</u>	<u>- 575</u>	<u>tein</u>		
OW.			-					•					**************************************
A						***************************************			····	w-w			**************************************
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SECOR International, incorporated										
Air Sparging/Vapor Extraction Monitoring Log SITE/INFORMATION										
	工程计划存储器	94. 连篇指数结束		SITEINFOR	MATION					
CLIENT/SITE	使的一般的数别	Atlantic Richfield Co	ompany Station No	, 5110		complete property and a single of the	Environmental Syst			
ADDRESS		5731 East Fireston	e Boulevard, South	Gate, California	jaŭil Pe	mit No.: SCAQMD		100000000000000000000000000000000000000		
TECHNICIAN	mic. Entit	Initials: Gus C		Date:	11-23-04	r⊥ a Weekday:	TO 50	Time: 0600		
ARRIVAL STATI	JS: Line Hall	ON(OFF	OPERAT	1911	4751-5	A Section of the Control of the Cont	HI- PEMA			
UTILITIES		Gas Meter	25308		m / therm Electrical	AND THE RESIDENCE OF THE PARTY	30712	KWI		
<b>"国际政策制度"</b>	用用環境膨脹		PROPERTY.	BLOWER	SKID POPER					
Temperature	and many the state of the state of the state of	Process: \5\°	٩		°F Post Cat.:	1519	octor or consequently (47) set	o <sub>F</sub>		
Process Flow		191	3 scfm	人性。 Change Cha	nt Paper? des		anifold Vacuum.	니동 "H <sub>z</sub> O scím		
Source Well Flo		Pi Ti Language	Jn H₂O ΔP. ::	* ration of the dollar	Temphia - Laga	FEMILIAN F		sciii scfm		
Effluent Flow (P				OgHin(Carey)	emp. (Lubricate?	Yes/400 Change C	Communication of the communica	Belts OK?		
Blower	The first of their religion of the consult	Amps:	<u> 75 s (c.</u>	Al	%open Manual:	Change Change	Summer 100000	%open		
Dilution Valve		Auto:			Acpen Manda.					
VES Concentrat		Influent (Diluted)	Clinia Crisis Profession and	ppm Influent (U			Effluent (1	mqq		
Monitoring Devi	Manager and the second second	とけんけ らも	S- 7000			n (type/date) ۱				
THE RESTRICT	<b>有关。3.15.15.15.15.15.15.1</b>		VAPOR EXTRA	CTION WELLS:		等。	ISSELALIA PIĞ r	eading express as.Нехале		
WELL NO.	Well Interval	Status O/C	Vacuum (*!wc)		ΔP ("wc)	Temp (Deg. F)	Flow (scfm)	DTW (ft) Well Screen (ft)		
SVE-1	* * Shallow ***	-6-		990000103101111100000000000000000000000	用河南南岸风影(铁塘)。这	海西特色的特殊技術		8 io 28		
OVE-1	Deep. 🚈 Deep. 🖖 )	100	48	122		The Address of Country		35.to 55		
SVE-2	Shallow	9		311 . 22	· · · · · · · · · · · · · · · · · · ·		errende errende er en en er en e Errende er en errende er en er e	7. to 27		
	Deep	100	4월	4613	中國中國共產黨的基礎的 及其中國國際的			8 to 28		
SVE-3	Shallow Deep u	100	પછ	89.1	们为SYEPPERE			85 to 55		
Alexander	Shallow	-0	```			的高级加强。	品的基本企业的	37, to 27		
SVE-4	Deep leave	100	48	219	Programme School	Section 1900 to 188		35 to 55		
SVE-5	Shallow	-0			1275年1984日 1986年 月4日	企業。網包經過	语词数 ATXX 中的 8	6 to 28		
	Deep	100	48	186	ge jan a saker jan a saker jan a			84 to 58		
MW-A7	Shallow :	100	ပမ	1204	14. 计数据数据 15. 15. 15. 15. 15. 15. 15. 15. 15. 15.	Carrier Control	A BANKET AN SEPTEMBER.	## ## ## ## ## ## ## ## ## ## ## ## ##		
	Deep		制度。如果防护机构的 1975年第四十二十二十二十二十二十二十二十二十二十二十二十二十二十二十二十二十二十二十二	NOTION	NECTED TO SYSTE			4 to 7		
VEW-2	Shallow Mid		energia (m. 1914) - Geografia (m. 1914)	111111111111111111111111111111111111111	NECTED TO SYSTE	T - 11'	1542 154 154	74 12 to 29		
	Deep	and the second of	2000年第二届中国国际		NECTED TO SYSTE	and the second of the second o		7.1/dylig 34 to 54		
3. D-3	Torie Wellinger		an a real participations	A NOT CON	NECTED TO SYSTE	Variation and the second	topi myalifaning ing	程度17 to 47 产生		
Separate as		"如果"。 《大學》,	24、富州市 1500	AIR COMPRESSOR		的复数形式	的的大學學的學習			
	ON/201	⊲ Jank Pr	essure!"	-Line Off-		jed Air Yes	(No) Chan	ged Oll? Yes/No		
Air Compressor	CIVIE	(ps	Walter -		and the	er?				
man salah dari dari dari dari dari dari dari dari		AIR SPARGING	SYSTEM MONITO	RINGUM	<b>对新生活的</b>		COMPLIA	NCE		
POINT	NUMBER "	Flow (scfm)	Pressure (psi)	Cycle On Cycle Off	Cýcie Og i i Cýcie Off	DO NOT OPERA	TE VES UNLESS (	CONDITIONS ARE SATISFIED		
	AS-1			12:00 AM 2:20 AM	:12:00 РМ : 2:20 РМ	in Current Per	mit Posted? 🧺	₹96/No		
2	AS-2			2:20 AM 4:40 AM	14:20:PM - 4:40.PM	VES Flow Rate	e ≤300 SCFM?	Ø#S/No		
2 ///s/3/	AS-3			4:40 AM 7:00 AM	16:40 PM 7:00 PM	: Temperature	>1,500,°F?,	TESTNO		
	AS-4			7:00 AM 9:20 AM	19:00 PM; 9:20 PM	Effluent VOC <50	) ppmν (as Hex)?	Zes/No		
794.350 <b>3</b> 4	AS 5 15 11			9:20 AM 11:40 AM	19:20 PM H1:40 PM	A mineral nation of the state o	gs:On-Site?	C/es/No		
	en e						医原列法基础性遗嘱剂	<b>建新型的数据的数据的数据</b>		
NOTE: Influent stud	and the state of the state of	en para esta en la del 1900 de	1990年代 网络斯坦克雷斯斯 医克勒	O(4)   ILLICOERWINED	REQUIRED ANAL	YSIS AND SAMPLING	CONTAINERS	EFFLUENT LIMITATIONS		
Effluent Samples must be	The second secon	Sample	Sample Date	Sample Time	TPHg	BTEX & Standard	Benzene			
collected within 15 minutes of one another	ii Sample ⊢	Collected?	Campio Bato	22,1413 11113	EPA 8015 Mod.	Oygenates EPA 82608	EPA 410A	/ VOCs = 50 ppmv		
ed Right fight 1 february 1	Monthly	YES/MO			1 Tedl	~ <sup>1</sup> /		自作品情况即则或作品经验信息分词		
Influent. Effluent	Monthly	YES/MO			1 Tedl		1 Tedlar Bag	Benzene = 0.24 ppmy		
r 1 Massachter auf geboren in der Schalle.	State of the section		ONIO			PSDrime	empty:	**************************************		
STATUS DEPAR	NAME OF TAXABLE PARTY.		ON/05	oog haansis oo attaan aan aan aan aan aan aan aan ah ah ah aan aan	<b>上</b> 的一种,一种一种一种一种一种一种一种一种一种一种一种一种一种一种一种一种一种一种	The Character and the	Compa			
		ons, recommendation		raewo a	MRN, PES	TARK O P	W SM 51Y	st Me		
	*	<u> </u>		2	LANCO TH					
		oueone)	ALL DAI			acy repar				
1746 SUST	En la Company	10.0 13	<u></u>	- 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1						
				-main-modernooncore 1 -m.u				7		

	SECOR International, Incorporated  Air Sparging/Vapor Extraction Monitoring Log											
***************************************		markets for the second of the test sides who	*************************		Contraction of the Contraction o	al fractions and the first	Continued and John Control	Sala Andrews (1818)	sanstėriyys della	a 1946 a pineti tiro da 1964 i i iliana e i i i i i	irinikla akallelas	eliskerebis. II. es etrebis
Martin				lib il S	ITE INFOR	MATION			<b>湖湖北州</b>		如何解析自然的	就由你是自己的人。 第11章是自己的人。
CLIENT/SITE		Atlantic Richfield C	ompany Station N	o. 5110			PROFES INVESTMENTS	The Course Market		Environmental Sys		
ADDRESS		5731 East Fireston		11	I Parel 11 office that are					Permit-to Operate	A COLUMN STORY OF A STORY OF STREET	
TECHNICIAN	<b>第6月15日 新華語</b>	Initlals: (ನಿಲ್ಲ್ ೬)						i w			Time:	<u> </u>
ARRIVAL STAT	us: which is the	ON/OFF	11 Stelling of an	ING HOUR				144	Market Co. Co.	FSC FAL	<u> </u>	IOA/b
UTILITIES	(1973) 经基础	Gas Meter	26.252	A 1886 State Western William		fm / therm				31895 ************************************	157.000 (1500) John (150	KWh We was out to a construction of the construction of the construction of the construction of the construction of
<b>新聞開稿名前</b> 。				建盟等企業	BLOWER					的研究的类似的数	的意识是分解的	*F
Temperature		Process: 15i		e i Mit i Ci	ianna Cha		Post Cat.:	1515 (No. 15		anlfold Vacuum.t	u.	"H <sub>2</sub> O
Process Flow	w (Pitot Tube)		In H <sub>2</sub> APIS AS			Tempul						scfm
Effluent Flow (F		Plate Carte Carte	'In H <sub>2</sub> O ΔP:	NAME OF	tvin H₂O	Temparti	推摩蘭斯	en E	Effluent F	low:		scfm
Blower		Amps:	25.8			Lubricate*			Change C		Belts OK?	
Dilution Valve		Auto:	<u></u>		No trace to the party		Manual;	Barata para Balance	<del></del> Nicerial constant	They have the region for the energy species and they give in the eye in	ne-rocketter to fore-und	%open
LEL Reading		Set VIII、中心进行	s 和中日本艺术之一。 ————————————————————————————————————					<b>国际公司</b>			<b>福州大学的公司</b>	% · ·
VES Concentral		Influent (Diluted)		ppm	Influent (U		822 Calibration	/fune/date		PPI-LHEX	1 12-2	ppm OY
Monitoring Dev	ice	MINT PA	VAPOR EXTRA	O'CLOKUM/E	198	1 13200000000000000000000000000000000000	24 30 0 0 m	In A world		Pid Pid I		***************************************
WELL NO.	Well interval	Status O/C	Vacuum ("wc)			νώ ΔΡ <i>ι</i> (	wc)	Temp (I	1027 (0.00)	Flow (scfm)	(ft) WTO	Well Screen (ft)
20201-0413602-45100	Shallow	Series Court		(630) S.	A PART OF A SERVICE				12.8 (10.5)		Visite Care	8 to 28
SVE-1	Deep	100		97.2		7. 10 10 10 10 10 10 10 10 10 10 10 10 10	<b>原作人</b> 。在	ing at	A CONTRACTOR	理理論意思數學學		
67/5 2	Shallow					为中国的15	西南海南	潮煙流	學科學學	是特别的	<b>中国共和国</b>	7 to 27
SVE-2	Deep	100	500 Y 100 11 Y	2419	<u> </u>	UNION	据引发进程		<b>建设建设</b>		<b>《新教》</b>	-35 to 55
:SVE-8	Shallow	0		~~		·····································			17 30 1 2		表情報 · 建铁镍	8 to 28 35 to 55
TANKANAN PALA Manganggan Kananggan	Deep	100		86.	k <sup>2</sup>		resided National	字形 使被 生存 法。数	を A T を M A A			7 to 27
SVE-4	Shallow	,00		123		<b>李林林的</b>		Boar v.	edit in	Section of the second	ANGERS.	(i) 35 to 55° √
PANCIONAL SERVICES CONTRACTOR DE CONTRACTOR D	Shallow	700				型工作的类似	温泉。美华春	this result	<b>M</b> West		<b>"你",说"说</b>	6 to,28
SVE-5	- Deep	. 100		201		心脏污染	相對原的	海州県外	Marine 1		<b>是不是不协会。</b> 自	34 to 56
MVV-A7	"Shallow"	100		906		all appropries			<b>建拿汽车</b> 车			10 to 30
点情情等特殊 (5)	Deep			第35年,特別 第45年	11-2	VEDTON T	CONTRACTOR	1. 2件系统 2.0 中华东南	発送器 (29] 対点の対抗を	相對可以可以可以 14. 10. 10. 10. 10. 10. 10. 10. 10. 10. 10	ing the state	35 to 65
VEW-2	Shaliow, (	Principal de la company de La company de la company d	on a king pagamaganga Patangan menganga	and and		NECTED T			alag peren			12 to 29
and the same of th	Deep	and the second second second						A deal of the same have be	in Caron	<b>建作成为。</b> 特别的语言	<b>的有一种的</b>	##W 34'to 54
D-3		The Spirit of the	TO MERCANDAMENT	理性情况	NOT CON	NECTEDAT	O SYSTEM	Mily Mar	推翻。例如	编制范围的意义方。	如何共活	7 to 47
			<b>以自然的的</b>	AIR COM			ANCE	機可提供	是非洲人	多。2018年第四次	类的特性的	
April 18 Mg	and f	Tank P	essure: Or	-Line	Off-	Line	Chang	ed Air	Voc	man 7	ged OII?	· Yes/বিট
Air Compressor	ON/OFF	in in	al)				File	er?::-:-:-	100	Mo Chan	(4) (10)	100000
roteras de la	Abustinaka.	AIR SPARGING	SYSTEM MONITO	DRING	<b>建筑的</b>		r diam.		ing a sign of the	COMPLIA	NCE	
THE POINT	NUMBER	Flow (scfm)	Pressure (psi)	Cycle On	Cycle Off	Cycle On	¿ Cycle Off	DO NOT	OPERA			S ARE SATISFIED
POINT	AS-1			12:00 AM	10% 10th 10th P.S.	2 2 2 2 2 2 2 2 3 1 1 1 1 1 1 1 1 1 1 1				nit Posted?		€es/No
2 2 10 2 2000 C 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	AS-2			2:20 AM		14:20 PM	201 1000000000			≲300 SCFM?√		Xes/No
Terminate training to the first of the firs	AS-3			1-2-1	7:00 AM		7;co.PM		An Annala Tale	>1,500 °F? \		Xes/No
4	AS-4			7:00 AM	9:20 AM	19:00 PM	9,20 PM	Application of Statistics	TIL AND CASE SERVED	ppmv (as Hex)?		Pes/No
	As-5			The Control of the second	11(40 AM	Part of the Control			AM 45.55	gsiOn-Site?		χ̃εä/No
A Secretary of the Control of the Co	1	SPECIAL CONTRACT			Problem 1. Trans.		ARIDI ING	-				
NOTE: Influent and		<ul> <li>67.970.05745551 (26.4.90%) (20.2.73%)</li> </ul>	\$55,599,000,000,500,500,000,000,000,000,0	Ola I Cherrac	halfill the					CONTAINERS	EFFLUE	NT LIMITATIONS
Ettiuant Samples must be	Collect	Sample	Sample Date	Sampl	e Time	TP	Hg	BTEX & S		Benzene	NO.	s = 50 ppmv
collected within 15 minutes of one another	Sample	Collected?	- •			EPA 80	15 Mod.	Oyger EPA 8		EPA 410A		Markette and the second
Influent (	Monthly	YES#(O	000009VVV9VI			~~~	1 Tedla	r Bag			定性 加速线点	1.影响强定的统。1
Effluent	Monthly	YES/MÖ	***************************************				1 Tedia	r Bağ		1 Tedlar Bag		e = 0.24 ppmv
STATUS DEPAR			ON*OFF	<u></u>		to the days of	MEMBER 1	Drums:		empty		full
MANAGER AND THE PARTY OF THE PA	******************************					THE RESERVE	(1995) P. M. M. D. Albert R.	Secretary Make 14			<u> </u>	
-	-	ns, recommendation		. ~	De.	,	. ~	منيته	مے کہ	200	00-	<b>、</b>
	M WAS	OFF OP			الدون الدوم المعر	<u>7721272</u> 144			<u>revu</u>		JAS	<u> </u>
		EPAR WR		ياحيا ر	JAMAN XILIAN	, ,=1	~ <u> </u>	تندندند	<u> </u>	3 / 3 /		
<u></u>	-10-			A-5							* *************************************	·····annanananarar serve
	- A - NA - Str. Colored Colore							<del></del>				
All O&M activities	s must be condu	cled every seven o	lays or sooner ur	less other	wise indic	ated by a "	'(Monthly)	" note,				

	SECOR International, Incorporated  Air Sparging/Vapor Extraction Monitoring Log											
	Air Sparging/Vapor Extraction Monitoring Log SITE INFORMATION 15 10 10 10 10 10 10 10 10 10 10 10 10 10											
And silver					Antaria antaria de Calabilita	2000年 (1990年)	orace due en antoni	[1] [1] [1] [1] [1] [1] [1] [1] [1] [1]				
CLIENT/SITE	of the control of the control of the control of	Atlantic Richfield C					Environmental Syst	· · · · · · · · · · · · · · · · · · ·				
ADDRESS		5731 East Fireston	araban ar				Permit-to Operate	ROMAN CAROLINA AND AND AND AND AND AND AND AND AND A				
TECHNICIAN	Contract to a service and order	Initials: ()				₩eekday:	HNG2	Time: 0800				
ARRIVAL STATI		N/OFF	Y 2001PST	177,7	OSO9 2 . 3 m / therm Electrical			KWh				
UTILITIES :	Constitution of the Consti	Gas Meter	27147		A STATE OF THE PROPERTY OF THE		33056					
		***************************************		# ## BLOWER	°F Post Cat.:	1507	(特別,00011)。 14年(19811)	askelikessisseki albabbioseura arasississi kasi marika				
Temperature Process Flow		Process:	506 180 scfm	Change Cha		No SEM	anifold Vacuum.	62 "H₂O				
		Priesile idalogation			Tempikana 15 19		low: 120	) scfm				
Effluent Flow (P		PH. WINGE TO	IntHio APINE	ang lage at In H₂O	Tempidi (idil)iis	Effluent I	Flow: M. E. Wol	single services and the services.				
Blower	The state of the state of the state of	Amps:	27.5	3A	Lubricate? C	Yes/No Change (	Oll? (Yes/No	Belts OK? Yes/No				
Dilution Valve		Auto:	energy and the Milesel	ookining of harman harman heel (1885)	%open Manual:	<del>O-</del>	recenter have been all to	%open				
**************************************	the first to a test of the third		and the Bridge half	ppm Influent (Ur	ndiluted) 3C.Y	ppm	Effluent 7.3	ppm				
VES Concentrate Monitoring Devi	Contraction of the contract of the contract of	Influent (Diluted)	2000	phillininetir (or				112-9-07				
Multipling Dev	CANAL PARTY		VAPOR EXTRA	CTION WELLS		<b>计算机数据数据数据</b>		eading express as Hexane				
WELL NO.	Well Interval	Status O/G	Vacuum ("wc)		ώλ. ΔP ("Wc) : Hr	Temp (Deg. F)	Flow (scfm)	DTW (ft) Well Screen (ft)				
Paragraph and the state of	Shallow (1)	-6	2 to 1 to	271200000000000000000000000000000000000	14年6月19日中国 (A)	one projective et al.	1.500 医圆形膜 5.5	8 to 28				
SVE-1	Deep 🔻 🔻	100	42	86.1		<b>和中国的基础的</b>	<b>经济流行的</b>	35 to 55				
SVE-2	Shallow	0		1000	THE COLUMN TWO IS NOT			7 to 27				
Control Control Control	Daep		62_	1998	[] 1973年 安保 的现在分词 第15章 1983年 第15章 1983年			8 to 28				
SVE-8	Shallow Deep	100	62	92.4	to a supplier de tip anno 1910.			85 to 55				
mary of the frequent	Shallow	.e			也在唯一都建国的工作。	and the state of		7 to 27				
SVE-4	Deep 's 's'	100	<u>62</u>	96.1	<b>使用翻译则</b> 的品值证据	[20] 在14年间的189		35 to 55				
SVE-5	Shallow	.0			<b>以为创始的对称</b> 。24.60			6 to 28				
	Deep	100	67	203			AND	34 to 56				
MW-A7	Shallow, Deep	<u>IDO</u>	62	<u>409</u>	名前 13 7年 13 13 13 13 13 14 15 15 15 15 15 15 15 15 15 15 15 15 15			35 to 65				
. Alfander bligere i Berlie Wilder in der eine	Shallow			dental design of the teathers of the	VECTED TO SYSTEM	iswin Wasan Albasi		25 / 3 / 4 to 7				
VEW-2	Mid	evilve en in	Without the Killing		NECTED TO SYSTEM	- accomply county and have been seen	<b>表现的现在分词</b>	12 to 29				
	Deep 100	动下25万部的增加	1600年16日東東	NOT/CON	NEOTED TO SYSTEM	<b>的"全国社会政策和告诉的</b>	都是其他的共同的	34 to 54				
∵ /\:D-3 / / ·			可能是出過物的		VECTED TO SYSTEM	Later and the	Contracto efficiendados	7 to 47.				
		Bar San Hi		AIR COMPRESSOR								
Air Compressor	ON/QFF	Tank Pr		-Line Oil-i	Line 		Mo Chang	ged Oil? PYESATo				
	s par nelles i en en est selsain.	<b>建造門開始</b>	KARAMEN .					學的問題。在1975年 第1976年第1月2日第1月2日日本語學等				
ALCOHOL: 10 11 11 11 11 11 11 11	nasa di kacamatan da Marata Marata da Ma	AIR SPARGING		RING Cycle Off Cycle Off			COMPLIA					
	NUMBER ***	Flow (scfm)	Pressure (psi)		Cycle On Cycle Off		mit Posted?	ONDITIONS ARE SATISFIED.				
	AS-1			-42,00 AM   2,20 AM	14:20 PM 2:26 PM	VES Flow Rate	the said that the destrict the second state of the second	Ges/No				
2	AS-2		<i></i>	2:20 AM : 4:40 A	16:40 PM (47:00 PM)	Temperature		∕®s/No				
3	AS-3			7:00 AM   9:20 AM	contract and confidential about the last termination	Effluent VOC <50		€Es/No				
4	AS4			9:20 AM 41:40 AM	9:20:PM   11:40 PM	Copies of Lo		¥es/No				
The State of the S	AS-5	Ideala, raceida upraticeas	ing the state of t									
All Sand	4. N. Meyer Make Germanya Makana	2012年 李朝 165 周史发表演	arati mendangan M		VAPOR SAMPLING REQUIRED ANALY			EFFLUENT LIMITATIONS				
NOTE: Influent and Effluent Samples must be	Collect	Sample	Sample Date	Sample Time	TPHg	BTEX & Standard	Benzene					
collected Willia 15 micules of one another	Sample	Collected?	Sample Date	Gample Inne	EPA 8015 Med.	Oygenates EPA 82808	EPA 410A	VOCs = 50 ppmv				
地震影響。所以四十二十		ÉS/NO		40 5 M	1 Tedla							
Influent Effluent	Monthly Monthly	Eš/NO	17-9-07	0520	1 Tedla		1 Tedlar Bag	Benzene = 0.24 ppmv				
n magar <sub>a s</sub> ayayayayaya Tanan na 1 tan farta sa sa 1 a a 1	Monthly	050	12-9-04	0815			······································	full				
STATUS DEPAR		z · ·	<b>⊙</b> N/OFF			e destro de arrolas	Subta.	tuit				
	tivitles, observatio جاه جات المترك	ns, recommendation		JAC. DIT	) ) ) )	COLLECTED SEE	s All Di	97A,				
		THY RAME	en alle	NAC. DIT		HANGED		OWER .				
			90 05.			- V	The Contract	· · · · · · · · · · · · · · · · · · ·				
<u></u>	٠٠٠ ٢٥١٥	em was	LI CF	150 1507 HIL	al and a second							

		***************************************	SECOR	Internat	ional, Inc	corporate	3 d				•		•
United and the state of the s	a trus seelh terme gerillari	andro aristo (de carrito do carrito de			xtraction M	and the same sections at the later	eres . Manus eres dit er til	Eliveration de la	anaver	(British 1811)	estantica:	engger og stattedeste ekstilweren en samti	
official file (196 to a communication of the		Tarosin period			HEINFOR			Unit: Pa	ranon F	nvironm	nfal Syst	ems FT-250	ergalis om sykretyret vinner, et et jægt
CLIENT/SITE			Company Station No ne Boulevard, South		ifornia			mit No.: SC					
ADDRESS TECHNICIAN			WAMAS			12.16 c		Wee	2015/2017 1995	n-we		Time:	0700
ARRIVAL STATI	2. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.	(CN)OFF		ING HOUR		0523		a TimAli	ırms:	ć	<del>}</del>		
UTILITIES	7 微点 非以能變	Gas Meter	28003					Meter	的 中 可 可 可 可 可 可 可 可 可 可 可 可 可	3421	8		KWh
<b>新聞編制器</b> 第5首	<b>建筑区型温暖</b> 源	常是在的特別。如果		例即新聞	BLOWER	SKIDIE	斯特斯加斯		沙里的			學課的關	
Temperature		Process:	1511	istilastas or	hange Cha		Post Cat.:	151(	Control Ni	inifold V	cuim"	ST.	<u>°</u> F 63 "H₂O
Process Flow	w (Phot Title)	PV/2011 OF EMPLOY	SCIM) 。In H <sub>2</sub> O   APN		,;;;in;H₂O	Temp::::					176	1-7-50	scfm
Effluent Flow (P	the real I force a provide the second	Philippin 1999	In H <sub>2</sub> O AP:		Min H <sub>2</sub> O	Temp,	指導。所謂	En En	luent F	low:		的视频中华	
Blower	tanada in a demana disebuasi	Amps:		<u> 28.9</u>				Yes/No Ch	ange C	117年時	Yes/No	Belts OK?	
Dilution Valve,		Auto:		uni serimen		%open	Manual:		Parking.	energia de	great the design		%open
LEL Reading VES Concentrat		Influent (Diluted)	AND THE RESIDENCE AND ADDRESS OF WARRANT		influent (U		1438			Effluent	8,5		ppm
Monitoring Devi		MENTER	A& 700	0			Calibration	(type/date)	100			12-16-	Charles and the Cold Service S
	2.4.2.2.1.1.1.2.1.2.1.2.1.2.1.2.1.2.1.2.		VAPOR EXTRA	the first transferred	Later and distances		经制度	100				2 12 22 24 22 2	ess as Hexane
WELL NO.	Well Interval	(] Status O/C	∵Vacuum ("wc)∂	Conc.	2-1-20-1-1	III AP.(		Temp (De	J.E)	Flow (	scfm)	DTW (ft)	Well Screen (ft)
SVE-1	Shallow ()	-0	63	96		的制度研究。 可能是为1925			anacie a	on supposed	Property in		35 to 55
SVE-2	Shallow	100	- 00	10	2	加州	am Priving	6074112			14 (14	<b>"在东门的"</b>	7 to 27
SVE-2	Deep	100	<u>63</u>	213	3	Carlotta	us or of			<b>装装心</b> 体	<b>建建筑</b>	AND A	\$5 to 55
SVE-8	: Shallow :						dans a site in a	·國際開始影響 阿拉斯斯·西西斯		的问题的编辑 连续编辑编辑			8 to 28
radiking dikada na salah Salah dikada salah di	Deep Shallow	100	<u> </u>	<u> 93</u>		Andrews Carry		人。由阿尔里				en dinate	740.27
SVE-4	· Deep W	100	63	ક્રાક	7. ]	COMPANY.	心能训练。	<b>"我们不是是</b> "		湖南美	Singapor		' 40 7 <b>35 to 55</b> 1 ′~ ∗
SVE-6	Shailow ु	-0-					i say jing	<b>国际的</b>	g grand a		SALENDA ALICENSES	THE MAN	16 to 28
	Deep 1	<u> </u>	63 	<u>76</u>		periode Assessed from	学生的对理 同时性的理						34 to 56 // 10 to 30
MW-A7	Shallow   1					TERRITOR OF THE		Total	Sales i		<b>建設度</b>		35 to 65 👉
	Shallow	erar elektria	er progressioner			ИЕСТЕР Т	OSYSTEM	/ 開閉 计时间	51 15 15 15 15 14 15 15 15		看他 的		4 to 7
VEW-2	Mid	English (State of the State of	Participation of the Care	2,1111-11			OSYSTEM		<b>以</b> 其實際	Market and the same	新产品的 新加州公司	BOTH TO THE	34 to 54
<u> 1917年</u> 名集 ( <b>D-3</b> ) -	Deep -	海拉克尔斯斯克·蒙尔斯南部 第000年8月12日福祉安徽市					O SYSTEM			resonant Possible			<sup>™</sup> 7 to 47
					PRESSOR	Company of the same of the				<b>有的智慧</b>	<b>基金增数</b>	<b>新聞程》,科科</b>	
		Tank P	ressure) On	-Line	Off-	Line	Change	ed Air	Yes/	7	Chang	jed'Oli7	Yes/Mo
Air Compressor	ONOFE	2 ■ SCVSWN MURCHENT	si)				Filte		169/	110			1887,60
(對於)(確定)(A)	one Teach (Salt affice) Seal had been been been	AIR SPARGING	SYSTEM MONITO	RING	<b>以外的</b>		Marine .				OMPLIA	NCE 4	鐵網數。物理
POINT	NUMBER	Flow (scfm)	Pressure (psi)	tal confederate 32 4 cms	Cycle Off	Cycle On	Cycle Off						ARE SATISFIED
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SECOR International, Incorporated  Air Sparping/Vapor Extraction Monitoring Log											
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	eng saint in 1680 di	AIR SPARGING	SYSTEM MONITO	RING				COMPL	IANCE		
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3	AS-3			a beautiful and and an alternative and an arrange	16:40 PM 7:00	3 4 4	1	>1,500 °F?,	37.	₹ /No	
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	Α <b>5-</b> 5			9:20 AM 11:40 AM	9:20 PM 14:40	ем ⊿ж Соріе				<b>VESIVO</b>	
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SECOR International, Incorporated											
Air Sparging/Vapor Extraction Monitoring Log SITE INFORMATION											
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ura vo			WAPOR EXTRA	CONC.(ppmv)		自己的 的复数		ease of the interest of the ease of the foreign and	reading expr	esstas Hexane Well Screen (ft)	
WELL NO.	Well Interval Shallow *	Status O/C	Macrini (I awe)	Electric (hbura)	District of Pro-			Flow (scfm)	ENECTRONIA	Wen Scieen (it)	
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SVE-5	Deep	100	Ы	69.7	DESTRUCTION OF THE SECOND	<b>第4</b> 章(3		<b>建筑建筑在水炭流</b>		34 to 56	
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# APPENDIX D

Laboratory Analytical Reports and Chain of Custody Documentation

Project: ARCO 0031, South Gate



#### LABORATORY REPORT

Prepared For: SECOR International, Inc.-Thousand Oaks

290 Conejo Ridge Avenue, Suite 200

Thousand Oaks, CA 91361 Attention: John Bollier

Sampled: 11/16/04-11/17/04

Received: 11/17/04

Issued: 12/03/04 16:48

#### NELAP #01108CA CA ELAP #1197 CSDLAC #10117

The results listed within this Laboratory Report pertain only to the samples tested in the laboratory. The analyses contained in this report were performed in accordance with the applicable certifications as noted. All soil samples are reported on a wet weight basis unless otherwise noted in the report. This Laboratory Report is confidential and is intended for the sole use of Del Mar Analytical and its client. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical. The Chain of Custody, 1 page, is included and is an integral part of this report.

This entire report was reviewed and approved for release.

#### **CASE NARRATIVE**

SAMPLE RECEIPT: Samples were received intact, at 5°C, on ice and with chain of custody documentation.

HOLDING TIMES: All samples were analyzed within prescribed holding times and/or in accordance with the Del Mar

Analytical Sample Acceptance Policy unless otherwise noted in the report.

PRESERVATION: Samples requiring preservation were verified prior to sample analysis.

QA/QC CRITERIA: All analyses met method criteria, except as noted in the report with data qualifiers.

COMMENTS: Results that fall between the MDL and RL are 'J' flagged.

SUBCONTRACTED: No analyses were subcontracted to an outside laboratory.

LABORATORY ID	CLIENT ID	MATRIX
INK1303-01	MW-19	Water
INK 1303-02	MW-20	Water
INK1303-03	FB-5110-20041116	Water
INK1303-04	TB-5110-20041116	Water

Reviewed By:

Del Mar Analytical, Irvine

dy Sofikery



SECOR International, Inc.-Thousand Oaks

290 Conejo Ridge Avenue, Suite 200

Thousand Oaks, CA 91361 Attention: John Bollier Project ID: ARCO 0031, South Gate

Report Number: INK1303

Sampled: 11/16/04-11/17/04

Received: 11/17/04

# **VOLATILE FUEL HYDROCARBONS (EPA 5030/8015M)**

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result		Date Extracted	Date Analyzed	Data Qualifiers	
Sample ID: INK1303-01 (MW-19 - W	ater)			Sampled: 11/17/04						
Reporting Units: ug/l	EDA 9015D	41/24124	22	50	99	1	11/04/04	11/24/04		
GRO (C4 - C12) Surrogate: 4-BFB (FID) (60-135%)	EPA 8015B	4K24124	22	30	99 97 %	I	11/24/04	11/24/04		
Sample ID: INK1303-02 (MW-20 - W	ater)				Samp	oled: 11/1	6/04			
Reporting Units: ug/l GRO (C4 - C12) Surrogate: 4-BFB (FID) (60-135%)	EPA 8015B	4K24124	220	500	<b>4600</b> 94 %	10	11/24/04	11/24/04		
Sample ID: INK1303-03 (FB-5110-20	041116 - Water)				Samp	oled: 11/1	6/04			
Reporting Units: ug/l GRO (C4 - C12) Surrogate: 4-BFB (FID) (60-135%)	EPA 8015B	4K24124	22	50	ND 95 %	1	11/24/04	11/25/04		
Sample ID: INK1303-04 (TB-5110-20041116 - Water)					Samp	oled: 11/1	6/04			
Reporting Units: ug/l GRO (C4 - C12) Surrogate: 4-BFB (FID) (60-135%)	EPA 8015B	4K24124	22	50	ND 94 %	1	11/24/04	11/25/04		



SECOR International, Inc.-Thousand Oaks

290 Conejo Ridge Avenue, Suite 200

Thousand Oaks, CA 91361 Attention: John Bollier Project ID: ARCO 0031, South Gate

Report Number: INK1303

Sampled: 11/16/04-11/17/04

Received: 11/17/04

# **VOLATILE ORGANICS by GC/MS (EPA 5030B/8260B)**

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: INK1303-01 (MW-19 - W	ater)				Samp	oled: 11/1	7/04		
Reporting Units: ug/l									
Acetone	EPA 8260B	4K28012	4.5	10	9.7	1	11/28/04	11/28/04	$_{\rm J,DX}$
2-Butanone (MEK)	EPA 8260B	4K28012	3.8	10	ND	1	11/28/04	11/28/04	
2-Hexanone	EPA 8260B	4K28012	2.6	10	ND	1	11/28/04	11/28/04	
4-Methyl-2-pentanone (MIBK)	EPA 8260B	4K28012	2.5	10	ND	1	11/28/04	11/28/04	
Surrogate: Dibromofluoromethane (80	-120%)				103 %				
Surrogate: Toluene-d8 (80-120%)					106%				
Surrogate: 4-Bromofluorobenzene (80-	120%)				94 %				
Sample ID: INK1303-02 (MW-20 - W	ater)				Samp	oled: 11/1	6/04		
Reporting Units: ug/l									
Acetone	EPA 8260B	4K27009	22	50	ND	5	11/27/04	11/27/04	
2-Butanone (MEK)	EPA 8260B	4K27009	19	50	ND	5	11/27/04	11/27/04	
2-Hexanone	EPA 8260B	4K27009	13	50	ND	5	11/27/04	11/27/04	
4-Methyl-2-pentanone (MIBK)	EPA 8260B	4K27009	12	50	ND	5	11/27/04	11/27/04	
Surrogate: Dibromofluoromethane (80	-120%)				107 %				
Surrogate: Toluene-d8 (80-120%)					110 %				
Surrogate: 4-Bromofluorobenzene (80-	120%)				95 %				
Sample ID: INK1303-03 (FB-5110-20	041116 - Water)				Samp	oled: 11/1	6/04		
Reporting Units: ug/l									
Acetone	EPA 8260B	4K27009	4.5	10	5.3	1	11/27/04	11/27/04	$_{\rm J,DX}$
2-Butanone (MEK)	EPA 8260B	4K27009	3.8	10	6.5	1	11/27/04	11/27/04	$_{\rm J,DX}$
2-Hexanone	EPA 8260B	4K27009	2.6	10	ND	1	11/27/04	11/27/04	
4-Methyl-2-pentanone (MIBK)	EPA 8260B	4K27009	2.5	10	ND	1	11/27/04	11/27/04	
Surrogate: Dibromofluoromethane (80	-120%)				105 %				
Surrogate: Toluene-d8 (80-120%)					108%				
Surrogate: 4-Bromofluorobenzene (80-	120%)				98 %				



SECOR International, Inc.-Thousand Oaks

290 Conejo Ridge Avenue, Suite 200

Thousand Oaks, CA 91361

Attention: John Bollier

Project ID: ARCO 0031, South Gate

Sampled: 11/16/04-11/17/04

Received: 11/17/04

Report Number: INK1303

#### **VOLATILE ORGANICS by GC/MS (EPA 5030B/8260B)**

			MDL	Reporting	Sample	Dilution	Date	Date	Data
Analyte	Method	Batch	Limit	Limit	Result	Factor	Extracted	Analyzed	Qualifiers
Sample ID: INK1303-04 (TB-5110-20	041116 - Water)				Samp	oled: 11/10	5/04		
Reporting Units: ug/l									
Acetone	EPA 8260B	4K27009	4.5	10	ND	1	11/27/04	11/27/04	
2-Butanone (MEK)	EPA 8260B	4K27009	3.8	10	ND	1	11/27/04	11/27/04	
2-Hexanone	EPA 8260B	4K27009	2.6	10	ND	1	11/27/04	11/27/04	
4-Methyl-2-pentanone (MIBK)	EPA 8260B	4K27009	2.5	10	ND	1	11/27/04	11/27/04	
Surrogate: Dibromofluoromethane (80	-120%)				103 %				
Surrogate: Toluene-d8 (80-120%)					107%				
Surrogate: 4-Bromofluorobenzene (80-	·120%)				98 %				

SECOR International, Inc.-Thousand Oaks

290 Conejo Ridge Avenue, Suite 200

Thousand Oaks, CA 91361 Report Number: INK1303

Attention: John Bollier

Project ID: ARCO 0031, South Gate

Sampled: 11/16/04-11/17/04

Received: 11/17/04

# **VOLATILE ORGANICS with OXYGENATES by GC/MS (EPA 8260B)**

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: INK1303-01 (MW-19 -	Water)				Samp	oled: 11/17	7/04		
Reporting Units: ug/l									
Benzene	EPA 8260B	4K28012	0.28	2.0	6.4	1	11/28/04	11/28/04	
Bromobenzene	EPA 8260B	4K28012	0.27	5.0	ND	1	11/28/04	11/28/04	
Bromochloromethane	EPA 8260B	4K28012	0.32	5.0	ND	1	11/28/04	11/28/04	
Bromodichloromethane	EPA 8260B	4K28012	0.30	2.0	ND	1	11/28/04	11/28/04	
Bromoform	EPA 8260B	4K28012	0.32	5.0	ND	1	11/28/04	11/28/04	
Bromomethane	EPA 8260B	4K28012	0.34	5.0	ND	1	11/28/04	11/28/04	
n-Butylbenzene	EPA 8260B	4K28012	0.37	5.0	ND	1	11/28/04	11/28/04	
sec-Butylbenzene	EPA 8260B	4K28012	0.25	5.0	ND	1	11/28/04	11/28/04	
tert-Butylbenzene	EPA 8260B	4K28012	0.22	5.0	ND	1	11/28/04	11/28/04	
Carbon tetrachloride	EPA 8260B	4K28012	0.28	5.0	ND	1	11/28/04	11/28/04	
Chlorobenzene	EPA 8260B	4K28012	0.36	2.0	ND	1	11/28/04	11/28/04	
Chloroethane	EPA 8260B	4K28012	0.33	5.0	ND	1	11/28/04	11/28/04	
Chloroform	EPA 8260B	4K28012	0.33	2.0	ND	1	11/28/04	11/28/04	
Chloromethane	EPA 8260B	4K28012	0.30	5.0	ND	1	11/28/04	11/28/04	
2-Chlorotoluene	EPA 8260B	4K28012	0.28	5.0	ND	1	11/28/04	11/28/04	
4-Chlorotoluene	EPA 8260B	4K28012	0.29	5.0	ND	1	11/28/04	11/28/04	
Dibromochloromethane	EPA 8260B	4K28012	0.28	2.0	ND	1	11/28/04	11/28/04	
1,2-Dibromo-3-chloropropane	EPA 8260B	4K28012	0.92	5.0	ND	1	11/28/04	11/28/04	
1,2-Dibromoethane (EDB)	EPA 8260B	4K28012	0.32	2.0	ND	1	11/28/04	11/28/04	
Dibromomethane	EPA 8260B	4K28012	0.36	2.0	ND	1	11/28/04	11/28/04	
1,2-Dichlorobenzene	EPA 8260B	4K28012	0.32	2.0	ND	1	11/28/04	11/28/04	
1,3-Dichlorobenzene	EPA 8260B	4K28012	0.35	2.0	ND	1	11/28/04	11/28/04	
1,4-Dichlorobenzene	EPA 8260B	4K28012	0.37	2.0	ND	1	11/28/04	11/28/04	
Dichlorodifluoromethane	EPA 8260B	4K28012	0.79	5.0	ND	1	11/28/04	11/28/04	
1,1-Dichloroethane	EPA 8260B	4K28012	0.27	2.0	ND	1	11/28/04	11/28/04	
1,2-Dichloroethane	EPA 8260B	4K28012	0.28	2.0	2.4	1	11/28/04	11/28/04	
1,1-Dichloroethene	EPA 8260B	4K28012	0.32	5.0	ND	1	11/28/04	11/28/04	
cis-1,2-Dichloroethene	EPA 8260B	4K28012	0.32	2.0	ND	1	11/28/04	11/28/04	
trans-1,2-Dichloroethene	EPA 8260B	4K28012	0.27	2.0	ND	1	11/28/04	11/28/04	
1,2-Dichloropropane	EPA 8260B	4K28012	0.35	2.0	ND	1	11/28/04	11/28/04	
1,3-Dichloropropane	EPA 8260B	4K28012	0.30	2.0	ND	1	11/28/04	11/28/04	
2,2-Dichloropropane	EPA 8260B	4K28012	0.29	2.0	ND	1	11/28/04	11/28/04	
1,1-Dichloropropene	EPA 8260B	4K28012	0.28	2.0	ND	1	11/28/04	11/28/04	
cis-1,3-Dichloropropene	EPA 8260B	4K28012	0.22	2.0	ND	1	11/28/04	11/28/04	
trans-1,3-Dichloropropene	EPA 8260B	4K28012	0.24	2.0	ND	1	11/28/04	11/28/04	
Ethylbenzene	EPA 8260B	4K28012	0.25	2.0	0.50	1	11/28/04	11/28/04	J,DX
Hexachlorobutadiene	EPA 8260B	4K28012	0.38	5.0	ND	1	11/28/04	11/28/04	
Isopropylbenzene	EPA 8260B	4K28012	0.25	2.0	0.69	1	11/28/04	11/28/04	$_{\rm J,DX}$
p-Isopropyltoluene	EPA 8260B	4K28012	0.28	2.0	ND	1	11/28/04	11/28/04	
Methylene chloride	EPA 8260B	4K28012	0.48	5.0	ND	1	11/28/04	11/28/04	
Naphthalene	EPA 8260B	4K28012	0.41	5.0	ND	1	11/28/04	11/28/04	

#### Del Mar Analytical, Irvine

SECOR International, Inc.-Thousand Oaks

290 Conejo Ridge Avenue, Suite 200

Thousand Oaks, CA 91361 Attention: John Bollier Project ID: ARCO 0031, South Gate

Report Number: INK1303

Sampled: 11/16/04-11/17/04

Received: 11/17/04

# **VOLATILE ORGANICS with OXYGENATES by GC/MS (EPA 8260B)**

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: INK1303-01 (MW-19 - W	ater) - cont.				Samp	led: 11/17	7/04		
Reporting Units: ug/l									
n-Propylbenzene	EPA 8260B	4K28012	0.27	2.0	0.55	1	11/28/04	11/28/04	$_{ m J,DX}$
Styrene	EPA 8260B	4K28012	0.16	2.0	ND	1	11/28/04	11/28/04	
1,1,1,2-Tetrachloroethane	EPA 8260B	4K28012	0.27	5.0	ND	1	11/28/04	11/28/04	
1,1,2,2-Tetrachloroethane	EPA 8260B	4K28012	0.24	2.0	ND	1	11/28/04	11/28/04	
Tetrachloroethene	EPA 8260B	4K28012	0.32	2.0	ND	1	11/28/04	11/28/04	
Toluene	EPA 8260B	4K28012	0.36	2.0	ND	1	11/28/04	11/28/04	
1,2,3-Trichlorobenzene	EPA 8260B	4K28012	0.45	5.0	ND	1	11/28/04	11/28/04	
1,2,4-Trichlorobenzene	EPA 8260B	4K28012	0.48	5.0	ND	1	11/28/04	11/28/04	
1,1,1-Trichloroethane	EPA 8260B	4K28012	0.30	2.0	ND	1	11/28/04	11/28/04	
1,1,2-Trichloroethane	EPA 8260B	4K28012	0.30	2.0	ND	1	11/28/04	11/28/04	
Trichloroethene	EPA 8260B	4K28012	0.26	2.0	ND	1	11/28/04	11/28/04	
Trichlorofluoromethane	EPA 8260B	4K28012	0.34	5.0	ND	1	11/28/04	11/28/04	
1,2,3-Trichloropropane	EPA 8260B	4K28012	0.85	10	ND	1	11/28/04	11/28/04	
1,2,4-Trimethylbenzene	EPA 8260B	4K28012	0.23	2.0	ND	1	11/28/04	11/28/04	
1,3,5-Trimethylbenzene	EPA 8260B	4K28012	0.26	2.0	ND	1	11/28/04	11/28/04	
Vinyl chloride	EPA 8260B	4K28012	0.26	5.0	ND	1	11/28/04	11/28/04	
o-Xylene	EPA 8260B	4K28012	0.24	2.0	ND	1	11/28/04	11/28/04	
m,p-Xylenes	EPA 8260B	4K28012	0.52	2.0	ND	1	11/28/04	11/28/04	
Xylenes, Total	EPA 8260B	4K28012	0.52	4.0	ND	1	11/28/04	11/28/04	
Di-isopropyl Ether (DIPE)	EPA 8260B	4K28012	0.25	5.0	0.25	1	11/28/04	11/28/04	J,DX
Ethyl tert-Butyl Ether (ETBE)	EPA 8260B	4K28012	0.28	5.0	ND	1	11/28/04	11/28/04	
tert-Amyl Methyl Ether (TAME)	EPA 8260B	4K28012	0.33	5.0	ND	1	11/28/04	11/28/04	
Methyl-tert-butyl Ether (MTBE)	EPA 8260B	4K28012	0.32	5.0	3.4	1	11/28/04	11/28/04	J,DX
tert-Butanol (TBA)	EPA 8260B	4K28012	3.1	50	22	1	11/28/04	11/28/04	$_{\rm J,DX}$
Ethanol	EPA 8260B	4K28012	100	150	ND	1	11/28/04	11/28/04	
Surrogate: Dibromofluoromethane (80-	-120%)				103 %				
Surrogate: Toluene-d8 (80-120%)					106%				
Surrogate: 4-Bromofluorobenzene (80-	120%)				94 %				

Del Mar Analytical, Irvine

SECOR International, Inc.-Thousand Oaks

290 Conejo Ridge Avenue, Suite 200

Thousand Oaks, CA 91361 Report Number: INK1303

Attention: John Bollier

Project ID: ARCO 0031, South Gate

Sampled: 11/16/04-11/17/04

Received: 11/17/04

# **VOLATILE ORGANICS with OXYGENATES by GC/MS (EPA 8260B)**

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: INK1303-02 (MW-20 - V	Vater)				Samp	oled: 11/16	5/04		
Reporting Units: ug/l					•				
Benzene	EPA 8260B	4K27009	1.4	10	93	5	11/27/04	11/27/04	
Bromobenzene	EPA 8260B	4K27009	1.4	25	ND	5	11/27/04	11/27/04	
Bromochloromethane	EPA 8260B	4K27009	1.6	25	ND	5	11/27/04	11/27/04	
Bromodichloromethane	EPA 8260B	4K27009	1.5	10	ND	5	11/27/04	11/27/04	
Bromoform	EPA 8260B	4K27009	1.6	25	ND	5	11/27/04	11/27/04	
Bromomethane	EPA 8260B	4K27009	1.7	25	ND	5	11/27/04	11/27/04	
n-Butylbenzene	EPA 8260B	4K27009	1.8	25	ND	5	11/27/04	11/27/04	
sec-Butylbenzene	EPA 8260B	4K27009	1.2	25	ND	5	11/27/04	11/27/04	
tert-Butylbenzene	EPA 8260B	4K27009	1.1	25	ND	5	11/27/04	11/27/04	
Carbon tetrachloride	EPA 8260B	4K27009	1.4	25	ND	5	11/27/04	11/27/04	
Chlorobenzene	EPA 8260B	4K27009	1.8	10	ND	5	11/27/04	11/27/04	
Chloroethane	EPA 8260B	4K27009	1.6	25	ND	5	11/27/04	11/27/04	
Chloroform	EPA 8260B	4K27009	1.6	10	ND	5	11/27/04	11/27/04	
Chloromethane	EPA 8260B	4K27009	1.5	25	ND	5	11/27/04	11/27/04	
2-Chlorotoluene	EPA 8260B	4K27009	1.4	25	ND	5	11/27/04	11/27/04	
4-Chlorotoluene	EPA 8260B	4K27009	1.4	25	ND	5	11/27/04	11/27/04	
Dibromochloromethane	EPA 8260B	4K27009	1.4	10	ND	5	11/27/04	11/27/04	
1,2-Dibromo-3-chloropropane	EPA 8260B	4K27009	4.6	25	ND	5	11/27/04	11/27/04	
1,2-Dibromoethane (EDB)	EPA 8260B	4K27009	1.6	10	ND	5	11/27/04	11/27/04	
Dibromomethane	EPA 8260B	4K27009	1.8	10	ND	5	11/27/04	11/27/04	
1,2-Dichlorobenzene	EPA 8260B	4K27009	1.6	10	ND	5	11/27/04	11/27/04	
1,3-Dichlorobenzene	EPA 8260B	4K27009	1.8	10	ND	5	11/27/04	11/27/04	
1,4-Dichlorobenzene	EPA 8260B	4K27009	1.8	10	ND	5	11/27/04	11/27/04	
Dichlorodifluoromethane	EPA 8260B	4K27009	4.0	25	ND	5	11/27/04	11/27/04	
1,1-Dichloroethane	EPA 8260B	4K27009	1.4	10	ND	5	11/27/04	11/27/04	
1,2-Dichloroethane	EPA 8260B	4K27009	1.4	10	ND	5	11/27/04	11/27/04	
1,1-Dichloroethene	EPA 8260B	4K27009	1.6	25	ND	5	11/27/04	11/27/04	
cis-1,2-Dichloroethene	EPA 8260B	4K27009	1.6	10	ND	5	11/27/04	11/27/04	
trans-1,2-Dichloroethene	EPA 8260B	4K27009	1.4	10	ND	5	11/27/04	11/27/04	
1,2-Dichloropropane	EPA 8260B	4K27009	1.8	10	ND	5	11/27/04	11/27/04	
1,3-Dichloropropane	EPA 8260B	4K27009	1.5	10	ND	5	11/27/04	11/27/04	
2,2-Dichloropropane	EPA 8260B	4K27009	1.4	10	ND	5	11/27/04	11/27/04	
1,1-Dichloropropene	EPA 8260B	4K27009	1.4	10	ND	5	11/27/04	11/27/04	
cis-1,3-Dichloropropene	EPA 8260B	4K27009	1.1	10	ND	5	11/27/04	11/27/04	
trans-1,3-Dichloropropene	EPA 8260B	4K27009	1.2	10	ND	5	11/27/04	11/27/04	
Ethylbenzene	EPA 8260B	4K27009	1.2	10	36	5	11/27/04	11/27/04	
Hexachlorobutadiene	EPA 8260B	4K27009	1.9	25	ND	5	11/27/04	11/27/04	
Isopropylbenzene	EPA 8260B	4K27009	1.2	10	2.6	5	11/27/04	11/27/04	J,DX
p-Isopropyltoluene	EPA 8260B	4K27009	1.4	10	ND	5	11/27/04	11/27/04	•
Methylene chloride	EPA 8260B	4K27009	2.4	25	ND	5	11/27/04	11/27/04	
Naphthalene	EPA 8260B	4K27009	2.0	25	2.7	5	11/27/04	11/27/04	J,DX
							-		

#### Del Mar Analytical, Irvine

SECOR International, Inc.-Thousand Oaks

290 Conejo Ridge Avenue, Suite 200

Thousand Oaks, CA 91361 Attention: John Bollier Project ID: ARCO 0031, South Gate

Report Number: INK1303

Sampled: 11/16/04-11/17/04

Received: 11/17/04

# **VOLATILE ORGANICS with OXYGENATES by GC/MS (EPA 8260B)**

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: INK1303-02 (MW-20 - W	/ater) - cont.				Samp	led: 11/1	6/04		
Reporting Units: ug/l									
n-Propylbenzene	EPA 8260B	4K27009	1.4	10	6.2	5	11/27/04	11/27/04	$_{\rm J,DX}$
Styrene	EPA 8260B	4K27009	0.80	10	ND	5	11/27/04	11/27/04	
1,1,1,2-Tetrachloroethane	EPA 8260B	4K27009	1.4	25	ND	5	11/27/04	11/27/04	
1,1,2,2-Tetrachloroethane	EPA 8260B	4K27009	1.2	10	ND	5	11/27/04	11/27/04	
Tetrachloroethene	EPA 8260B	4K27009	1.6	10	ND	5	11/27/04	11/27/04	
Toluene	EPA 8260B	4K27009	1.8	10	ND	5	11/27/04	11/27/04	
1,2,3-Trichlorobenzene	EPA 8260B	4K27009	2.2	25	ND	5	11/27/04	11/27/04	
1,2,4-Trichlorobenzene	EPA 8260B	4K27009	2.4	25	ND	5	11/27/04	11/27/04	
1,1,1-Trichloroethane	EPA 8260B	4K27009	1.5	10	ND	5	11/27/04	11/27/04	
1,1,2-Trichloroethane	EPA 8260B	4K27009	1.5	10	ND	5	11/27/04	11/27/04	
Trichloroethene	EPA 8260B	4K27009	1.3	10	ND	5	11/27/04	11/27/04	
Trichlorofluoromethane	EPA 8260B	4K27009	1.7	25	ND	5	11/27/04	11/27/04	
1,2,3-Trichloropropane	EPA 8260B	4K27009	4.2	50	ND	5	11/27/04	11/27/04	
1,2,4-Trimethylbenzene	EPA 8260B	4K27009	1.2	10	ND	5	11/27/04	11/27/04	
1,3,5-Trimethylbenzene	EPA 8260B	4K27009	1.3	10	ND	5	11/27/04	11/27/04	
Vinyl chloride	EPA 8260B	4K27009	1.3	25	ND	5	11/27/04	11/27/04	
o-Xylene	EPA 8260B	4K27009	1.2	10	ND	5	11/27/04	11/27/04	
m,p-Xylenes	EPA 8260B	4K27009	2.6	10	5.8	5	11/27/04	11/27/04	$_{\rm J,DX}$
Xylenes, Total	EPA 8260B	4K27009	2.6	20	5.8	5	11/27/04	11/27/04	$_{\rm J,DX}$
Di-isopropyl Ether (DIPE)	EPA 8260B	4K27009	1.2	25	ND	5	11/27/04	11/27/04	
Ethyl tert-Butyl Ether (ETBE)	EPA 8260B	4K27009	1.4	25	ND	5	11/27/04	11/27/04	
tert-Amyl Methyl Ether (TAME)	EPA 8260B	4K27009	1.6	25	2.5	5	11/27/04	11/27/04	$_{\rm J,DX}$
Methyl-tert-butyl Ether (MTBE)	EPA 8260B	4K27009	1.6	25	340	5	11/27/04	11/27/04	
tert-Butanol (TBA)	EPA 8260B	4K27009	16	250	61	5	11/27/04	11/27/04	J,DX
Ethanol	EPA 8260B	4K27009	500	750	ND	5	11/27/04	11/27/04	
Surrogate: Dibromofluoromethane (80	9-120%)				107%				
Surrogate: Toluene-d8 (80-120%)					110 %				
Surrogate: 4-Bromofluorobenzene (80	-120%)				95 %				

Del Mar Analytical, Irvine

SECOR International, Inc.-Thousand Oaks

290 Conejo Ridge Avenue, Suite 200

Thousand Oaks, CA 91361 Report Number: INK1303

Attention: John Bollier

Project ID: ARCO 0031, South Gate

Sampled: 11/16/04-11/17/04

Received: 11/17/04

# **VOLATILE ORGANICS with OXYGENATES by GC/MS (EPA 8260B)**

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers	
Sample ID: INK1303-03 (FB-5110-2	20041116 - Water)			Sampled: 11/16/04						
Reporting Units: ug/l										
Benzene	EPA 8260B	4K27009	0.28	2.0	ND	1	11/27/04	11/27/04		
Bromobenzene	EPA 8260B	4K27009	0.27	5.0	ND	1	11/27/04	11/27/04		
Bromochloromethane	EPA 8260B	4K27009	0.32	5.0	ND	1	11/27/04	11/27/04		
Bromodichloromethane	EPA 8260B	4K27009	0.30	2.0	ND	1	11/27/04	11/27/04		
Bromoform	EPA 8260B	4K27009	0.32	5.0	ND	1	11/27/04	11/27/04		
Bromomethane	EPA 8260B	4K27009	0.34	5.0	ND	1	11/27/04	11/27/04		
n-Butylbenzene	EPA 8260B	4K27009	0.37	5.0	ND	1	11/27/04	11/27/04		
sec-Butylbenzene	EPA 8260B	4K27009	0.25	5.0	ND	1	11/27/04	11/27/04		
tert-Butylbenzene	EPA 8260B	4K27009	0.22	5.0	ND	1	11/27/04	11/27/04		
Carbon tetrachloride	EPA 8260B	4K27009	0.28	5.0	ND	1	11/27/04	11/27/04		
Chlorobenzene	EPA 8260B	4K27009	0.36	2.0	ND	1	11/27/04	11/27/04		
Chloroethane	EPA 8260B	4K27009	0.33	5.0	ND	1	11/27/04	11/27/04		
Chloroform	EPA 8260B	4K27009	0.33	2.0	0.36	1	11/27/04	11/27/04	$_{\rm J,DX}$	
Chloromethane	EPA 8260B	4K27009	0.30	5.0	ND	1	11/27/04	11/27/04		
2-Chlorotoluene	EPA 8260B	4K27009	0.28	5.0	ND	1	11/27/04	11/27/04		
4-Chlorotoluene	EPA 8260B	4K27009	0.29	5.0	ND	1	11/27/04	11/27/04		
Dibromochloromethane	EPA 8260B	4K27009	0.28	2.0	ND	1	11/27/04	11/27/04		
1,2-Dibromo-3-chloropropane	EPA 8260B	4K27009	0.92	5.0	ND	1	11/27/04	11/27/04		
1,2-Dibromoethane (EDB)	EPA 8260B	4K27009	0.32	2.0	ND	1	11/27/04	11/27/04		
Dibromomethane	EPA 8260B	4K27009	0.36	2.0	ND	1	11/27/04	11/27/04		
1,2-Dichlorobenzene	EPA 8260B	4K27009	0.32	2.0	ND	1	11/27/04	11/27/04		
1,3-Dichlorobenzene	EPA 8260B	4K27009	0.35	2.0	ND	1	11/27/04	11/27/04		
1,4-Dichlorobenzene	EPA 8260B	4K27009	0.37	2.0	ND	1	11/27/04	11/27/04		
Dichlorodifluoromethane	EPA 8260B	4K27009	0.79	5.0	ND	1	11/27/04	11/27/04		
1,1-Dichloroethane	EPA 8260B	4K27009	0.27	2.0	ND	1	11/27/04	11/27/04		
1,2-Dichloroethane	EPA 8260B	4K27009	0.28	2.0	ND	1	11/27/04	11/27/04		
1,1-Dichloroethene	EPA 8260B	4K27009	0.32	5.0	ND	1	11/27/04	11/27/04		
cis-1,2-Dichloroethene	EPA 8260B	4K27009	0.32	2.0	ND	1	11/27/04	11/27/04		
trans-1,2-Dichloroethene	EPA 8260B	4K27009	0.27	2.0	ND	1	11/27/04	11/27/04		
1,2-Dichloropropane	EPA 8260B	4K27009	0.35	2.0	ND	1	11/27/04	11/27/04		
1,3-Dichloropropane	EPA 8260B	4K27009	0.30	2.0	ND	1	11/27/04	11/27/04		
2,2-Dichloropropane	EPA 8260B	4K27009	0.29	2.0	ND	1	11/27/04	11/27/04		
1,1-Dichloropropene	EPA 8260B	4K27009	0.28	2.0	ND	1	11/27/04	11/27/04		
cis-1,3-Dichloropropene	EPA 8260B	4K27009	0.22	2.0	ND	1	11/27/04	11/27/04		
trans-1,3-Dichloropropene	EPA 8260B	4K27009	0.24	2.0	ND	1	11/27/04	11/27/04		
Ethylbenzene	EPA 8260B	4K27009	0.25	2.0	ND	1	11/27/04	11/27/04		
Hexachlorobutadiene	EPA 8260B	4K27009	0.38	5.0	ND	1	11/27/04	11/27/04		
Isopropylbenzene	EPA 8260B	4K27009	0.25	2.0	ND	1	11/27/04	11/27/04		
p-Isopropyltoluene	EPA 8260B	4K27009	0.28	2.0	ND	1	11/27/04	11/27/04		
Methylene chloride	EPA 8260B	4K27009	0.48	5.0	ND	1	11/27/04	11/27/04		
Naphthalene	EPA 8260B	4K27009	0.41	5.0	ND	1	11/27/04	11/27/04		
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#### Del Mar Analytical, Irvine

SECOR International, Inc.-Thousand Oaks

290 Conejo Ridge Avenue, Suite 200

Thousand Oaks, CA 91361 Attention: John Bollier Project ID: ARCO 0031, South Gate

Sampled: 11/16/04-11/17/04

Report Number: INK1303 Received: 11/17/04

# **VOLATILE ORGANICS with OXYGENATES by GC/MS (EPA 8260B)**

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers	
Sample ID: INK1303-03 (FB-5110-200-	41116 - Water) - c	ont.		Sampled: 11/16/04						
Reporting Units: ug/l										
n-Propylbenzene	EPA 8260B	4K27009	0.27	2.0	ND	1	11/27/04	11/27/04		
Styrene	EPA 8260B	4K27009	0.16	2.0	ND	1	11/27/04	11/27/04		
1,1,1,2-Tetrachloroethane	EPA 8260B	4K27009	0.27	5.0	ND	1	11/27/04	11/27/04		
1,1,2,2-Tetrachloroethane	EPA 8260B	4K27009	0.24	2.0	ND	1	11/27/04	11/27/04		
Tetrachloroethene	EPA 8260B	4K27009	0.32	2.0	ND	1	11/27/04	11/27/04		
Toluene	EPA 8260B	4K27009	0.36	2.0	ND	1	11/27/04	11/27/04		
1,2,3-Trichlorobenzene	EPA 8260B	4K27009	0.45	5.0	ND	1	11/27/04	11/27/04		
1,2,4-Trichlorobenzene	EPA 8260B	4K27009	0.48	5.0	ND	1	11/27/04	11/27/04		
1,1,1-Trichloroethane	EPA 8260B	4K27009	0.30	2.0	ND	1	11/27/04	11/27/04		
1,1,2-Trichloroethane	EPA 8260B	4K27009	0.30	2.0	ND	1	11/27/04	11/27/04		
Trichloroethene	EPA 8260B	4K27009	0.26	2.0	ND	1	11/27/04	11/27/04		
Trichlorofluoromethane	EPA 8260B	4K27009	0.34	5.0	ND	1	11/27/04	11/27/04		
1,2,3-Trichloropropane	EPA 8260B	4K27009	0.85	10	ND	1	11/27/04	11/27/04		
1,2,4-Trimethylbenzene	EPA 8260B	4K27009	0.23	2.0	ND	1	11/27/04	11/27/04		
1,3,5-Trimethylbenzene	EPA 8260B	4K27009	0.26	2.0	ND	1	11/27/04	11/27/04		
Vinyl chloride	EPA 8260B	4K27009	0.26	5.0	ND	1	11/27/04	11/27/04		
o-Xylene	EPA 8260B	4K27009	0.24	2.0	ND	1	11/27/04	11/27/04		
m,p-Xylenes	EPA 8260B	4K27009	0.52	2.0	ND	1	11/27/04	11/27/04		
Xylenes, Total	EPA 8260B	4K27009	0.52	4.0	ND	1	11/27/04	11/27/04		
Di-isopropyl Ether (DIPE)	EPA 8260B	4K27009	0.25	5.0	ND	1	11/27/04	11/27/04		
Ethyl tert-Butyl Ether (ETBE)	EPA 8260B	4K27009	0.28	5.0	ND	1	11/27/04	11/27/04		
tert-Amyl Methyl Ether (TAME)	EPA 8260B	4K27009	0.33	5.0	ND	1	11/27/04	11/27/04		
Methyl-tert-butyl Ether (MTBE)	EPA 8260B	4K27009	0.32	5.0	ND	1	11/27/04	11/27/04		
tert-Butanol (TBA)	EPA 8260B	4K27009	3.1	50	ND	1	11/27/04	11/27/04		
Ethanol	EPA 8260B	4K27009	100	150	ND	1	11/27/04	11/27/04		
Surrogate: Dibromofluoromethane (80-	120%)				105 %					
Surrogate: Toluene-d8 (80-120%)					108%					
Surrogate: 4-Bromofluorobenzene (80-1	20%)				98 %					

Del Mar Analytical, Irvine

SECOR International, Inc.-Thousand Oaks

290 Conejo Ridge Avenue, Suite 200

Thousand Oaks, CA 91361 Report Number: INK1303

Attention: John Bollier

Project ID: ARCO 0031, South Gate

Sampled: 11/16/04-11/17/04

Received: 11/17/04

# **VOLATILE ORGANICS with OXYGENATES by GC/MS (EPA 8260B)**

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: INK1303-04 (TB-5110-20	0041116 - Water)				Samp	oled: 11/16	5/04		
Reporting Units: ug/l									
Benzene	EPA 8260B	4K27009	0.28	2.0	ND	1	11/27/04	11/27/04	
Bromobenzene	EPA 8260B	4K27009	0.27	5.0	ND	1	11/27/04	11/27/04	
Bromochloromethane	EPA 8260B	4K27009	0.32	5.0	ND	1	11/27/04	11/27/04	
Bromodichloromethane	EPA 8260B	4K27009	0.30	2.0	ND	1	11/27/04	11/27/04	
Bromoform	EPA 8260B	4K27009	0.32	5.0	ND	1	11/27/04	11/27/04	
Bromomethane	EPA 8260B	4K27009	0.34	5.0	ND	1	11/27/04	11/27/04	
n-Butylbenzene	EPA 8260B	4K27009	0.37	5.0	ND	1	11/27/04	11/27/04	
sec-Butylbenzene	EPA 8260B	4K27009	0.25	5.0	ND	1	11/27/04	11/27/04	
tert-Butylbenzene	EPA 8260B	4K27009	0.22	5.0	ND	1	11/27/04	11/27/04	
Carbon tetrachloride	EPA 8260B	4K27009	0.28	5.0	ND	1	11/27/04	11/27/04	
Chlorobenzene	EPA 8260B	4K27009	0.36	2.0	ND	1	11/27/04	11/27/04	
Chloroethane	EPA 8260B	4K27009	0.33	5.0	ND	1	11/27/04	11/27/04	
Chloroform	EPA 8260B	4K27009	0.33	2.0	ND	1	11/27/04	11/27/04	
Chloromethane	EPA 8260B	4K27009	0.30	5.0	ND	1	11/27/04	11/27/04	
2-Chlorotoluene	EPA 8260B	4K27009	0.28	5.0	ND	1	11/27/04	11/27/04	
4-Chlorotoluene	EPA 8260B	4K27009	0.29	5.0	ND	1	11/27/04	11/27/04	
Dibromochloromethane	EPA 8260B	4K27009	0.28	2.0	ND	1	11/27/04	11/27/04	
1,2-Dibromo-3-chloropropane	EPA 8260B	4K27009	0.92	5.0	ND	1	11/27/04	11/27/04	
1,2-Dibromoethane (EDB)	EPA 8260B	4K27009	0.32	2.0	ND	1	11/27/04	11/27/04	
Dibromomethane	EPA 8260B	4K27009	0.36	2.0	ND	1	11/27/04	11/27/04	
1,2-Dichlorobenzene	EPA 8260B	4K27009	0.32	2.0	ND	1	11/27/04	11/27/04	
1,3-Dichlorobenzene	EPA 8260B	4K27009	0.35	2.0	ND	1	11/27/04	11/27/04	
1,4-Dichlorobenzene	EPA 8260B	4K27009	0.37	2.0	ND	1	11/27/04	11/27/04	
Dichlorodifluoromethane	EPA 8260B	4K27009	0.79	5.0	ND	1	11/27/04	11/27/04	
1,1-Dichloroethane	EPA 8260B	4K27009	0.27	2.0	ND	1	11/27/04	11/27/04	
1,2-Dichloroethane	EPA 8260B	4K27009	0.28	2.0	ND	1	11/27/04	11/27/04	
1,1-Dichloroethene	EPA 8260B	4K27009	0.32	5.0	ND	1	11/27/04	11/27/04	
cis-1,2-Dichloroethene	EPA 8260B	4K27009	0.32	2.0	ND	1	11/27/04	11/27/04	
trans-1,2-Dichloroethene	EPA 8260B	4K27009	0.27	2.0	ND	1	11/27/04	11/27/04	
1,2-Dichloropropane	EPA 8260B	4K27009	0.35	2.0	ND	1	11/27/04	11/27/04	
1,3-Dichloropropane	EPA 8260B	4K27009	0.30	2.0	ND	1	11/27/04	11/27/04	
2,2-Dichloropropane	EPA 8260B	4K27009	0.29	2.0	ND	1	11/27/04	11/27/04	
1,1-Dichloropropene	EPA 8260B	4K27009	0.28	2.0	ND	1	11/27/04	11/27/04	
cis-1,3-Dichloropropene	EPA 8260B	4K27009	0.22	2.0	ND	1	11/27/04	11/27/04	
trans-1,3-Dichloropropene	EPA 8260B	4K27009	0.24	2.0	ND	1	11/27/04	11/27/04	
Ethylbenzene	EPA 8260B	4K27009	0.25	2.0	ND	1	11/27/04	11/27/04	
Hexachlorobutadiene	EPA 8260B	4K27009	0.38	5.0	ND	1	11/27/04	11/27/04	
Isopropylbenzene	EPA 8260B	4K27009	0.25	2.0	ND	1	11/27/04	11/27/04	
p-Isopropyltoluene	EPA 8260B	4K27009	0.28	2.0	ND	1	11/27/04	11/27/04	
Methylene chloride	EPA 8260B	4K27009	0.48	5.0	ND	1	11/27/04	11/27/04	
Naphthalene	EPA 8260B	4K27009	0.41	5.0	ND	1	11/27/04	11/27/04	
Del Mar Analytical, Irvine									

#### **Del Mar Analytical, Irvine**

SECOR International, Inc.-Thousand Oaks

290 Conejo Ridge Avenue, Suite 200

Thousand Oaks, CA 91361 Attention: John Bollier Project ID: ARCO 0031, South Gate

Report Number: INK1303

Sampled: 11/16/04-11/17/04

Received: 11/17/04

# **VOLATILE ORGANICS with OXYGENATES by GC/MS (EPA 8260B)**

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: INK1303-04 (TB-5110-200	41116 - Water) - c	ont.			Samp	led: 11/1 <i>6</i>	5/04		
Reporting Units: ug/l									
n-Propylbenzene	EPA 8260B	4K27009	0.27	2.0	ND	1	11/27/04	11/27/04	
Styrene	EPA 8260B	4K27009	0.16	2.0	ND	1	11/27/04	11/27/04	
1,1,1,2-Tetrachloroethane	EPA 8260B	4K27009	0.27	5.0	ND	1	11/27/04	11/27/04	
1,1,2,2-Tetrachloroethane	EPA 8260B	4K27009	0.24	2.0	ND	1	11/27/04	11/27/04	
Tetrachloroethene	EPA 8260B	4K27009	0.32	2.0	ND	1	11/27/04	11/27/04	
Toluene	EPA 8260B	4K27009	0.36	2.0	ND	1	11/27/04	11/27/04	
1,2,3-Trichlorobenzene	EPA 8260B	4K27009	0.45	5.0	ND	1	11/27/04	11/27/04	
1,2,4-Trichlorobenzene	EPA 8260B	4K27009	0.48	5.0	ND	1	11/27/04	11/27/04	
1,1,1-Trichloroethane	EPA 8260B	4K27009	0.30	2.0	ND	1	11/27/04	11/27/04	
1,1,2-Trichloroethane	EPA 8260B	4K27009	0.30	2.0	ND	1	11/27/04	11/27/04	
Trichloroethene	EPA 8260B	4K27009	0.26	2.0	ND	1	11/27/04	11/27/04	
Trichlorofluoromethane	EPA 8260B	4K27009	0.34	5.0	ND	1	11/27/04	11/27/04	
1,2,3-Trichloropropane	EPA 8260B	4K27009	0.85	10	ND	1	11/27/04	11/27/04	
1,2,4-Trimethylbenzene	EPA 8260B	4K27009	0.23	2.0	ND	1	11/27/04	11/27/04	
1,3,5-Trimethylbenzene	EPA 8260B	4K27009	0.26	2.0	ND	1	11/27/04	11/27/04	
Vinyl chloride	EPA 8260B	4K27009	0.26	5.0	ND	1	11/27/04	11/27/04	
o-Xylene	EPA 8260B	4K27009	0.24	2.0	ND	1	11/27/04	11/27/04	
m,p-Xylenes	EPA 8260B	4K27009	0.52	2.0	ND	1	11/27/04	11/27/04	
Xylenes, Total	EPA 8260B	4K27009	0.52	4.0	ND	1	11/27/04	11/27/04	
Di-isopropyl Ether (DIPE)	EPA 8260B	4K27009	0.25	5.0	ND	1	11/27/04	11/27/04	
Ethyl tert-Butyl Ether (ETBE)	EPA 8260B	4K27009	0.28	5.0	ND	1	11/27/04	11/27/04	
tert-Amyl Methyl Ether (TAME)	EPA 8260B	4K27009	0.33	5.0	ND	1	11/27/04	11/27/04	
Methyl-tert-butyl Ether (MTBE)	EPA 8260B	4K27009	0.32	5.0	ND	1	11/27/04	11/27/04	
tert-Butanol (TBA)	EPA 8260B	4K27009	3.1	50	ND	1	11/27/04	11/27/04	
Ethanol	EPA 8260B	4K27009	100	150	ND	1	11/27/04	11/27/04	
Surrogate: Dibromofluoromethane (80-	120%)				103 %				
Surrogate: Toluene-d8 (80-120%)					107 %				
Surrogate: 4-Bromofluorobenzene (80-1	(20%)				98 %				

SECOR International, Inc.-Thousand Oaks 290 Conejo Ridge Avenue, Suite 200

Project ID: ARCO 0031, South Gate

Sampled: 11/16/04-11/17/04

Thousand Oaks, CA 91361 Attention: John Bollier Report Number: INK1303 Received: 11/17/04

# METHOD BLANK/QC DATA

# **VOLATILE FUEL HYDROCARBONS (EPA 5030/8015M)**

		Reporting			Spike	Source		%REC		RPD	Data
Analyte	Result	Limit	MDL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifiers
Batch: 4K24124 Extracted: 11/24/04	<u>1</u>										
Blank Analyzed: 11/24/04 (4K24124-BL	K1)										
GRO (C4 - C12)	ND	50	22	ug/l							
Surrogate: 4-BFB (FID)	9.72			ug/l	10.0		97	60-135			
LCS Analyzed: 11/24/04 (4K24124-BS1)	)										
GRO (C4 - C12)	242	50	22	ug/l	220		110	70-135			
Surrogate: 4-BFB (FID)	11.5			ug/l	10.0		115	60-135			
Matrix Spike Analyzed: 11/24/04 (4K24	124-MS1)				Sou	rce: INK	1257-05				
GRO (C4 - C12)	242	50	22	ug/l	220	ND	110	60-135			
Surrogate: 4-BFB (FID)	11.5			ug/l	10.0		115	60-135			
Matrix Spike Dup Analyzed: 11/24/04 (4	4K24124-MS	S <b>D</b> 1)			Sou	rce: INK	1257-05				
GRO (C4 - C12)	239	50	22	ug/l	220	ND	109	60-135	1	20	
Surrogate: 4-BFB (FID)	11.0			ug/l	10.0		110	60-135			

Sampled: 11/16/04-11/17/04

SECOR International, Inc.-Thousand Oaks 290 Conejo Ridge Avenue, Suite 200

Project ID: ARCO 0031, South Gate

e 200

Report Number: INK1303 Received: 11/17/04

Attention: John Bollier

Thousand Oaks, CA 91361

#### METHOD BLANK/QC DATA

# **VOLATILE ORGANICS by GC/MS (EPA 5030B/8260B)**

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC	RPD	RPD Limit	Data Qualifiers
Batch: 4K27009 Extracted: 11/27/0	)4										
Blank Analyzed: 11/27/04 (4K27009-B)											
Acetone	ND	10	4.5	ug/l							
2-Butanone (MEK)	ND	10	3.8	ug/l							
2-Hexanone	ND	10	2.6	ug/l							
4-Methyl-2-pentanone (MIBK)	ND	10	2.5	ug/l							
Surrogate: Dibromofluoromethane	25.6			ug/l	25.0		102	80-120			
Surrogate: Toluene-d8	26.9			ug/l	25.0		108	80-120			
Surrogate: 4-Bromofluorobenzene	24.2			ug/l	25.0		97	80-120			
LCS Analyzed: 11/27/04 (4K27009-BS)	1)										
Acetone	14.8	10	4.5	ug/l	25.0		59	30-140			
2-Butanone (MEK)	20.6	10	3.8	ug/l	25.0		82	40-135			
2-Hexanone	19.1	10	2.6	ug/l	25.0		76	40-140			
4-Methyl-2-pentanone (MIBK)	20.2	10	2.5	ug/l	25.0		81	40-140			
Surrogate: Dibromofluoromethane	25.3			ug/l	25.0		101	80-120			
Surrogate: Toluene-d8	26.2			ug/l	25.0		105	80-120			
Surrogate: 4-Bromofluorobenzene	23.7			ug/l	25.0		95	80-120			
Matrix Spike Analyzed: 11/27/04 (4K2	7009-MS1)				Sou	rce: INK	1439-01				
Acetone	171	100	45	ug/l	250	ND	68	10-150			
2-Butanone (MEK)	244	100	38	ug/l	250	ND	98	30-145			
2-Hexanone	239	100	26	ug/l	250	ND	96	20-145			
4-Methyl-2-pentanone (MIBK)	240	100	25	ug/l	250	ND	96	40-145			
Surrogate: Dibromofluoromethane	264			ug/l	250		106	80-120			
Surrogate: Toluene-d8	272			ug/l	250		109	80-120			
Surrogate: 4-Bromofluorobenzene	244			ug/l	250		98	80-120			
Matrix Spike Dup Analyzed: 11/27/04	(4K27009-M	SD1)			Sou	rce: INK	1439-01				
Acetone	172	100	45	ug/l	250	ND	69	10-150	1	35	
2-Butanone (MEK)	243	100	38	ug/l	250	ND	97	30-145	0	40	
2-Hexanone	243	100	26	ug/l	250	ND	97	20-145	2	35	
4-Methyl-2-pentanone (MIBK)	243	100	25	ug/l	250	ND	97	40-145	1	35	
Surrogate: Dibromofluoromethane	263			ug/l	250		105	80-120			
Surrogate: Toluene-d8	271			ug/l	250		108	80-120			
Surrogate: 4-Bromofluorobenzene	244			ug/l	250		98	80-120			
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#### Del Mar Analytical, Irvine

SECOR International, Inc.-Thousand Oaks 290 Conejo Ridge Avenue, Suite 200

Project ID: ARCO 0031, South Gate

Sampled: 11/16/04-11/17/04

Thousand Oaks, CA 91361 Attention: John Bollier Report Number: INK1303 Received: 11/17/04

#### METHOD BLANK/QC DATA

#### **VOLATILE ORGANICS by GC/MS (EPA 5030B/8260B)**

		Reporting			Spike	Source		%REC		RPD	Data
Analyte	Result	Limit	MDL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifiers
Batch: 4K28012 Extracted: 11/2	28/04										
Blank Analyzed: 11/28/04 (4K28012	2-BLK1)										
Acetone	ND	10	4.5	ug/1							
2-Butanone (MEK)	ND	10	3.8	ug/l							
2-Hexanone	ND	10	2.6	ug/l							
4-Methyl-2-pentanone (MIBK)	ND	10	2.5	ug/l							
Surrogate: Dibromofluoromethane	26.8			ug/l	25.0		107	80-120			
Surrogate: Toluene-d8	26.8			ug/l	25.0		107	80-120			
Surrogate: 4-Bromofluorobenzene	24.4			ug/l	25.0		98	80-120			
LCS Analyzed: 11/28/04 (4K28012-	BS1)										
Acetone	17.2	10	4.5	ug/l	25.0		69	30-140			
2-Butanone (MEK)	24.0	10	3.8	ug/l	25.0		96	40-135			
2-Hexanone	21.6	10	2.6	ug/l	25.0		86	40-140			
4-Methyl-2-pentanone (MIBK)	22.9	10	2.5	ug/l	25.0		92	40-140			
Surrogate: Dibromofluoromethane	26.6			ug/l	25.0		106	80-120			
Surrogate: Toluene-d8	27.0			ug/l	25.0		108	80-120			
Surrogate: 4-Bromofluorobenzene	24.4			ug/l	25.0		98	80-120			
Matrix Spike Analyzed: 11/28/04 (4	K28012-MS1)				Sou	ırce: INK	1387-04				
Acetone	21.6	10	4.5	ug/l	25.0	ND	86	10-150			
2-Butanone (MEK)	30.1	10	3.8	ug/l	25.0	ND	120	30-145			
2-Hexanone	28.7	10	2.6	ug/l	25.0	ND	115	20-145			
4-Methyl-2-pentanone (MIBK)	29.3	10	2.5	ug/l	25.0	ND	117	40-145			
Surrogate: Dibromofluoromethane	26.4			ug/l	25.0		106	80-120			
Surrogate: Toluene-d8	26.3			ug/l	25.0		105	80-120			
Surrogate: 4-Bromofluorobenzene	23.7			ug/l	25.0		95	80-120			
Matrix Spike Dup Analyzed: 11/28/	04 (4K28012-MS	<b>D</b> 1)			Sou	ırce: INK	1387-04				
Acetone	22.9	10	4.5	ug/l	25.0	ND	92	10-150	6	35	
2-Butanone (MEK)	32.2	10	3.8	ug/l	25.0	ND	129	30-145	7	40	
2-Hexanone	30.9	10	2.6	ug/l	25.0	ND	124	20-145	7	35	
4-Methyl-2-pentanone (MIBK)	31.8	10	2.5	ug/l	25.0	ND	127	40-145	8	35	
Surrogate: Dibromofluoromethane	26.3			ug/l	25.0		105	80-120			
Surrogate: Toluene-d8	26.4			ug/l	25.0		106	80-120			
Surrogate: 4-Bromofluorobenzene	24.0			ug/l	25.0		96	80-120			

#### **Del Mar Analytical, Irvine**

SECOR International, Inc.-Thousand Oaks 290 Conejo Ridge Avenue, Suite 200

Project ID: ARCO 0031, South Gate

Sampled: 11/16/04-11/17/04

Thousand Oaks, CA 91361 Attention: John Bollier

Report Number: INK1303 Received: 11/17/04

#### METHOD BLANK/QC DATA

#### **VOLATILE ORGANICS with OXYGENATES by GC/MS (EPA 8260B)**

Analyta	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC	RPD	RPD Limit	Data Qualifiers
Analyte		Limit	MIDL	Omes	Level	Result	70KEC	Lamus	KFD	Limit	Quanners
<b>Batch: 4K27009 Extracted: 11/27/0</b>	<u>4</u>										
Blank Analyzed: 11/27/04 (4K27009-BI											
Benzene	ND	2.0	0.28	ug/l							
Bromobenzene	ND	5.0	0.27	ug/l							
Bromochloromethane	ND	5.0	0.32	ug/l							
Bromodichloromethane	ND	2.0	0.30	ug/l							
Bromoform	ND	5.0	0.32	ug/l							
Bromomethane	ND	5.0	0.34	ug/l							
n-Butylbenzene	ND	5.0	0.37	ug/l							
sec-Butylbenzene	ND	5.0	0.25	ug/l							
tert-Butylbenzene	ND	5.0	0.22	ug/l							
Carbon tetrachloride	ND	5.0	0.28	ug/l							
Chlorobenzene	ND	2.0	0.36	ug/l							
Chloroethane	ND	5.0	0.33	ug/l							
Chloroform	ND	2.0	0.33	ug/l							
Chloromethane	ND	5.0	0.30	ug/l							
2-Chlorotoluene	ND	5.0	0.28	ug/l							
4-Chlorotoluene	ND	5.0	0.29	ug/l							
Dibromochloromethane	ND	2.0	0.28	ug/l							
1,2-Dibromo-3-chloropropane	ND	5.0	0.92	ug/l							
1,2-Dibromoethane (EDB)	ND	2.0	0.32	ug/l							
Dibromomethane	ND	2.0	0.36	ug/l							
1,2-Dichlorobenzene	ND	2.0	0.32	ug/l							
1,3-Dichlorobenzene	ND	2.0	0.35	ug/l							
1,4-Dichlorobenzene	ND	2.0	0.37	ug/l							
Dichlorodifluoromethane	ND	5.0	0.79	ug/l							
1,1-Dichloroethane	ND	2.0	0.27	ug/l							
1,2-Dichloroethane	ND	2.0	0.28	ug/l							
1,1-Dichloroethene	ND	5.0	0.32	ug/l							
cis-1,2-Dichloroethene	ND	2.0	0.32	ug/l							
trans-1,2-Dichloroethene	ND	2.0	0.27	ug/l							
1,2-Dichloropropane	ND	2.0	0.35	ug/l							
1,3-Dichloropropane	ND	2.0	0.30	ug/l							
2,2-Dichloropropane	ND	2.0	0.29	ug/l							
1,1-Dichloropropene	ND	2.0	0.28	ug/l							
cis-1,3-Dichloropropene	ND	2.0	0.22	ug/l							
trans-1,3-Dichloropropene	ND	2.0	0.24	ug/l							
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#### Del Mar Analytical, Irvine

SECOR International, Inc.-Thousand Oaks 290 Conejo Ridge Avenue, Suite 200

Project ID: ARCO 0031, South Gate

Sampled: 11/16/04-11/17/04

Thousand Oaks, CA 91361 Attention: John Bollier

Report Number: INK1303 Received: 11/17/04

#### METHOD BLANK/QC DATA

#### **VOLATILE ORGANICS with OXYGENATES by GC/MS (EPA 8260B)**

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC	RPD	RPD Limit	Data Qualifiers
•											<b>C</b>
<b>Batch: 4K27009 Extracted: 11/27/0</b>	<u>+</u>										
Blank Analyzed: 11/27/04 (4K27009-BI	.K1)										
Ethylbenzene	ND	2.0	0.25	ug/l							
Hexachlorobutadiene	ND	5.0	0.38	ug/l							
Isopropylbenzene	ND	2.0	0.25	ug/l							
p-Isopropyltoluene	ND	2.0	0.28	ug/l							
Methylene chloride	ND	5.0	0.48	ug/l							
Naphthalene	ND	5.0	0.41	ug/l							
n-Propylbenzene	ND	2.0	0.27	ug/l							
Styrene	ND	2.0	0.16	ug/l							
1,1,1,2-Tetrachloroethane	ND	5.0	0.27	ug/l							
1,1,2,2-Tetrachloroethane	ND	2.0	0.24	ug/l							
Tetrachloroethene	ND	2.0	0.32	ug/l							
Toluene	ND	2.0	0.36	ug/l							
1,2,3-Trichlorobenzene	ND	5.0	0.45	ug/l							
1,2,4-Trichlorobenzene	ND	5.0	0.48	ug/l							
1,1,1-Trichloroethane	ND	2.0	0.30	ug/l							
1,1,2-Trichloroethane	ND	2.0	0.30	ug/l							
Trichloroethene	ND	2.0	0.26	ug/l							
Trichlorofluoromethane	ND	5.0	0.34	ug/l							
1,2,3-Trichloropropane	ND	10	0.85	ug/l							
1,2,4-Trimethylbenzene	ND	2.0	0.23	ug/l							
1,3,5-Trimethylbenzene	ND	2.0	0.26	ug/l							
Vinyl chloride	ND	5.0	0.26	ug/l							
o-Xylene	ND	2.0	0.24	ug/l							
m,p-Xylenes	ND	2.0	0.52	ug/l							
Xylenes, Total	ND	4.0	0.52	ug/l							
Di-isopropyl Ether (DIPE)	ND	5.0	0.25	ug/l							
Ethyl tert-Butyl Ether (ETBE)	ND	5.0	0.28	ug/l							
tert-Amyl Methyl Ether (TAME)	ND	5.0	0.33	ug/l							
Methyl-tert-butyl Ether (MTBE)	ND	5.0	0.32	ug/l							
tert-Butanol (TBA)	ND	50	3.1	ug/l							
Ethanol	ND	150	100	ug/l							
Surrogate: Dibromofluoromethane	25.6			ug/l	25.0		102	80-120			
Surrogate: Toluene-d8	26.9			ug/l	25.0		108	80-120			
Surrogate: 4-Bromofluorobenzene	24.2			ug/l	25.0		97	80-120			
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#### Del Mar Analytical, Irvine

SECOR International, Inc.-Thousand Oaks 290 Conejo Ridge Avenue, Suite 200

Project ID: ARCO 0031, South Gate

Sampled: 11/16/04-11/17/04

Thousand Oaks, CA 91361 Attention: John Bollier Report Number: INK1303 Received: 11/17/04

#### METHOD BLANK/QC DATA

#### **VOLATILE ORGANICS with OXYGENATES by GC/MS (EPA 8260B)**

Analyte	Result	Reporting Limit	MDI.	Units	Spike Level	Source Result	%REC	%REC	RPD	RPD Limit	Data Qualifiers
•		Limit	MIDL	Omes	Level	Result	/OKEC	Lamits	KID	Limit	Quanners
<b>Batch: 4K27009 Extracted: 11/27/04</b>	<u>.</u>										
LCS Analyzed: 11/27/04 (4K27009-BS1)	1										
Benzene	24.3	2.0	0.28	ug/l	25.0		97	70-120			
Bromobenzene	23.0	5.0	0.27	ug/l	25.0		92	80-120			
Bromochloromethane	23.9	5.0	0.32	ug/l	25.0		96	65-135			
Bromodichloromethane	24.1	2.0	0.30	ug/l	25.0		96	70-140			
Bromoform	20.3	5.0	0.32	ug/l	25.0		81	55-135			
Bromomethane	24.6	5.0	0.34	ug/l	25.0		98	60-140			
n-Butylbenzene	24.1	5.0	0.37	ug/l	25.0		96	75-130			
sec-Butylbenzene	24.7	5.0	0.25	ug/l	25.0		99	75-125			
tert-Butylbenzene	23.5	5.0	0.22	ug/l	25.0		94	75-125			
Carbon tetrachloride	23.6	5.0	0.28	ug/l	25.0		94	70-140			
Chlorobenzene	22.4	2.0	0.36	ug/l	25.0		90	80-125			
Chloroethane	23.8	5.0	0.33	ug/l	25.0		95	60-145			
Chloroform	23.9	2.0	0.33	ug/l	25.0		96	75-130			
Chloromethane	23.1	5.0	0.30	ug/l	25.0		92	40-145			
2-Chlorotoluene	23.4	5.0	0.28	ug/l	25.0		94	75-125			
4-Chlorotoluene	23.7	5.0	0.29	ug/l	25.0		95	75-125			
Dibromochloromethane	21.2	2.0	0.28	ug/l	25.0		85	65-145			
1,2-Dibromo-3-chloropropane	21.8	5.0	0.92	ug/l	25.0		87	50-135			
1,2-Dibromoethane (EDB)	23.8	2.0	0.32	ug/l	25.0		95	75-125			
Dibromomethane	22.3	2.0	0.36	ug/l	25.0		89	75-130			
1,2-Dichlorobenzene	22.8	2.0	0.32	ug/l	25.0		91	80-120			
1,3-Dichlorobenzene	22.3	2.0	0.35	ug/l	25.0		89	80-120			
1,4-Dichlorobenzene	22.5	2.0	0.37	ug/l	25.0		90	80-120			
Dichlorodifluoromethane	22.5	5.0	0.79	ug/l	25.0		90	10-160			
1,1-Dichloroethane	23.6	2.0	0.27	ug/l	25.0		94	70-135			
1,2-Dichloroethane	21.6	2.0	0.28	ug/l	25.0		86	60-150			
1,1-Dichloroethene	24.6	5.0	0.32	ug/l	25.0		98	75-135			
cis-1,2-Dichloroethene	23.4	2.0	0.32	ug/l	25.0		94	70-125			
trans-1,2-Dichloroethene	25.1	2.0	0.27	ug/l	25.0		100	70-130			
1,2-Dichloropropane	23.0	2.0	0.35	ug/l	25.0		92	70-120			
1,3-Dichloropropane	22.7	2.0	0.30	ug/l	25.0		91	70-130			
2,2-Dichloropropane	25.4	2.0	0.29	ug/l	25.0		102	65-150			
1,1-Dichloropropene	24.3	2.0	0.28	ug/l	25.0		97	75-130			
cis-1,3-Dichloropropene	24.0	2.0	0.22	ug/l	25.0		96	75-130			
trans-1,3-Dichloropropene	24.3	2.0	0.24	ug/l	25.0		97	75-135			

#### **Del Mar Analytical, Irvine**

SECOR International, Inc.-Thousand Oaks 290 Conejo Ridge Avenue, Suite 200

Project ID: ARCO 0031, South Gate

Report Number: INK1303

Sampled: 11/16/04-11/17/04

Attention: John Bollier

Thousand Oaks, CA 91361

Received: 11/17/04

#### METHOD BLANK/QC DATA

#### **VOLATILE ORGANICS with OXYGENATES by GC/MS (EPA 8260B)**

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC	RPD	RPD Limit	Data Qualifiers
•											
<b>Batch: 4K27009 Extracted: 11/27/0</b>	4_										
LCS Analyzed: 11/27/04 (4K27009-BS1	)										
Ethylbenzene	23.5	2.0	0.25	ug/l	25.0		94	80-120			
Hexachlorobutadiene	21.1	5.0	0.38	ug/l	25.0		84	65-140			
Isopropylbenzene	25.6	2.0	0.25	ug/l	25.0		102	75-125			
p-Isopropyltoluene	22.9	2.0	0.28	ug/l	25.0		92	75-125			
Methylene chloride	24.9	5.0	0.48	ug/l	25.0		100	60-135			
Naphthalene	21.5	5.0	0.41	ug/l	25.0		86	50-145			
n-Propylbenzene	24.5	2.0	0.27	ug/l	25.0		98	75-130			
Styrene	25.8	2.0	0.16	ug/l	25.0		103	80-135			
1,1,1,2-Tetrachloroethane	22.9	5.0	0.27	ug/l	25.0		92	70-145			
1,1,2,2-Tetrachloroethane	23.9	2.0	0.24	ug/l	25.0		96	60-135			
Tetrachloroethene	23.0	2.0	0.32	ug/l	25.0		92	75-125			
Toluene	22.4	2.0	0.36	ug/l	25.0		90	75-120			
1,2,3-Trichlorobenzene	22.1	5.0	0.45	ug/l	25.0		88	65-135			
1,2,4-Trichlorobenzene	22.9	5.0	0.48	ug/l	25.0		92	70-140			
1,1,1-Trichloroethane	23.7	2.0	0.30	ug/l	25.0		95	75-140			
1,1,2-Trichloroethane	22.3	2.0	0.30	ug/l	25.0		89	70-125			
Trichloroethene	22.5	2.0	0.26	ug/l	25.0		90	80-120			
Trichlorofluoromethane	25.4	5.0	0.34	ug/l	25.0		102	65-145			
1,2,3-Trichloropropane	22.1	10	0.85	ug/l	25.0		88	60-130			
1,2,4-Trimethylbenzene	24.9	2.0	0.23	ug/l	25.0		100	75-125			
1,3,5-Trimethylbenzene	25.6	2.0	0.26	ug/l	25.0		102	75-125			
Vinyl chloride	21.8	5.0	0.26	ug/l	25.0		87	50-130			
o-Xylene	23.6	2.0	0.24	ug/l	25.0		94	75-125			
m,p-Xylenes	49.0	2.0	0.52	ug/l	50.0		98	75-120			
Xylenes, Total	72.6	4.0	0.52	ug/l	75.0		97	75-125			
Di-isopropyl Ether (DIPE)	24.1	5.0	0.25	ug/l	25.0		96	65-135			
Ethyl tert-Butyl Ether (ETBE)	22.7	5.0	0.28	ug/l	25.0		91	60-140			
tert-Amyl Methyl Ether (TAME)	23.9	5.0	0.33	ug/l	25.0		96	60-140			
Methyl-tert-butyl Ether (MTBE)	23.0	5.0	0.32	ug/l	25.0		92	55-145			
tert-Butanol (TBA)	109	50	3.1	ug/l	125		87	70-140			
Ethanol	198	150	100	ug/l	250		79	35-165			
Surrogate: Dibromofluoromethane	25.3			ug/l	25.0		101	80-120			
Surrogate: Toluene-d8	26.2			ug/l	25.0		105	80-120			
Surrogate: 4-Bromofluorobenzene	23.7			ug/l	25.0		95	80-120			

#### Del Mar Analytical, Irvine

SECOR International, Inc.-Thousand Oaks

Project ID: ARCO 0031, South Gate

Report Number: INK1303

Reporting

290 Conejo Ridge Avenue, Suite 200 Thousand Oaks, CA 91361

%REC

Attention: John Bollier

Sampled: 11/16/04-11/17/04 Received: 11/17/04

RPD

Data

#### METHOD BLANK/QC DATA

#### **VOLATILE ORGANICS with OXYGENATES by GC/MS (EPA 8260B)**

Spike

Source

Analyte	Result	Limit	MDL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifiers
Batch: 4K27009 Extracted: 11/2	27/04										
Matrix Spike Analyzed: 11/27/04 (4	4K27009-MS1)				Sou	ırce: INK	1439-01				
Benzene	263	20	2.8	ug/l	250	7.0	102	70-120			
Bromobenzene	235	50	2.7	ug/l	250	ND	94	65-130			
Bromochloromethane	251	50	3.2	ug/l	250	ND	100	65-140			
Bromodichloromethane	255	20	3.0	ug/l	250	ND	102	70-140			
Bromoform	217	50	3.2	ug/l	250	ND	87	55-140			
Bromomethane	246	50	3.4	ug/l	250	ND	98	50-145			
n-Butylbenzene	243	50	3.7	ug/l	250	ND	97	70-140			
sec-Butylbenzene	249	50	2.5	ug/l	250	ND	100	70-130			
tert-Butylbenzene	237	50	2.2	ug/l	250	ND	95	70-130			
Carbon tetrachloride	242	50	2.8	ug/l	250	ND	97	70-145			
Chlorobenzene	225	20	3.6	ug/l	250	ND	90	80-125			
Chloroethane	242	50	3.3	ug/l	250	ND	97	50-145			
Chloroform	249	20	3.3	ug/l	250	ND	100	70-135			
Chloromethane	237	50	3.0	ug/l	250	ND	95	35-145			
2-Chlorotoluene	236	50	2.8	ug/l	250	ND	94	70-140			
4-Chlorotoluene	242	50	2.9	ug/l	250	ND	97	70-140			
Dibromochloromethane	224	20	2.8	ug/l	250	ND	90	65-145			
1,2-Dibromo-3-chloropropane	257	50	9.2	ug/l	250	ND	103	45-155			
1,2-Dibromoethane (EDB)	257	20	3.2	ug/l	250	ND	103	70-130			
Dibromomethane	239	20	3.6	ug/l	250	ND	96	65-140			
1,2-Dichlorobenzene	227	20	3.2	ug/l	250	ND	91	75-130			
1,3-Dichlorobenzene	224	20	3.5	ug/l	250	ND	90	75-130			
1,4-Dichlorobenzene	226	20	3.7	ug/l	250	ND	90	80-120			
Dichlorodifluoromethane	233	50	7.9	ug/l	250	ND	93	10-160			
1,1-Dichloroethane	246	20	2.7	ug/l	250	ND	98	65-135			
1,2-Dichloroethane	279	20	2.8	ug/l	250	44	94	60-150			
1,1-Dichloroethene	256	50	3.2	ug/l	250	ND	102	65-140			
cis-1,2-Dichloroethene	240	20	3.2	ug/l	250	ND	96	65-130			
trans-1,2-Dichloroethene	256	20	2.7	ug/l	250	ND	102	65-135			
1,2-Dichloropropane	240	20	3.5	ug/l	250	ND	96	65-130			
1,3-Dichloropropane	242	20	3.0	ug/l	250	ND	97	65-140			
2,2-Dichloropropane	262	20	2.9	ug/l	250	ND	105	60-150			
1,1-Dichloropropene	253	20	2.8	ug/l	250	ND	101	65-140			
cis-1,3-Dichloropropene	255	20	2.2	ug/l	250	ND	102	70-140			
trans-1,3-Dichloropropene	259	20	2.4	ug/l	250	ND	104	70-140			

#### Del Mar Analytical, Irvine

%REC

SECOR International, Inc.-Thousand Oaks 290 Conejo Ridge Avenue, Suite 200

Project ID: ARCO 0031, South Gate

Sampled: 11/16/04-11/17/04

RPD

Data

Thousand Oaks, CA 91361 Attention: John Bollier Report Number: INK1303 Received: 11/17/04

Spike

Source

#### METHOD BLANK/QC DATA

#### **VOLATILE ORGANICS with OXYGENATES by GC/MS (EPA 8260B)**

Reporting

		Reporting			opine	Source		, orten		141 2	Butu
Analyte	Result	Limit	MDL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifiers
Batch: 4K27009 Extracted: 11/2	7/04										
Matrix Spike Analyzed: 11/27/04 (4)	K27009-MS1)				Sou	ırce: INK	1439-01				
Ethylbenzene	248	20	2.5	ug/l	250	11	95	70-130			
Hexachlorobutadiene	205	50	3.8	ug/l	250	ND	82	65-140			
Isopropylbenzene	264	20	2.5	ug/l	250	ND	106	70-130			
p-Isopropyltoluene	230	20	2.8	ug/l	250	ND	92	70-130			
Methylene chloride	264	50	4.8	ug/l	250	ND	106	60-135			
Naphthalene	236	50	4.1	ug/l	250	6.5	92	50-150			
n-Propylbenzene	250	20	2.7	ug/l	250	2.9	99	70-135			
Styrene	258	20	1.6	ug/l	250	ND	103	55-145			
1,1,1,2-Tetrachloroethane	231	50	2.7	ug/l	250	ND	92	70-145			
1,1,2,2-Tetrachloroethane	269	20	2.4	ug/l	250	ND	108	60-145			
Tetrachloroethene	231	20	3.2	ug/l	250	ND	92	70-130			
Toluene	259	20	3.6	ug/l	250	26	93	70-120			
1,2,3-Trichlorobenzene	211	50	4.5	ug/l	250	ND	84	60-140			
1,2,4-Trichlorobenzene	218	50	4.8	ug/l	250	ND	87	60-140			
1,1,1-Trichloroethane	244	20	3.0	ug/l	250	ND	98	75-140			
1,1,2-Trichloroethane	248	20	3.0	ug/l	250	ND	99	60-135			
Trichloroethene	229	20	2.6	ug/l	250	ND	92	70-125			
Trichlorofluoromethane	264	50	3.4	ug/l	250	ND	106	55-145			
1,2,3-Trichloropropane	253	100	8.5	ug/l	250	ND	101	55-140			
1,2,4-Trimethylbenzene	276	20	2.3	ug/l	250	28	99	60-125			
1,3,5-Trimethylbenzene	261	20	2.6	ug/l	250	8.0	101	70-130			
Vinyl chloride	190	50	2.6	ug/l	250	ND	76	40-135			
o-Xylene	261	20	2.4	ug/l	250	24	95	65-125			
m,p-Xylenes	541	20	5.2	ug/l	500	49	98	65-130			
Xylenes, Total	802	40	5.2	ug/l	750	73	97	65-135			
Di-isopropyl Ether (DIPE)	266	50	2.5	ug/l	250	12	102	65-140			
Ethyl tert-Butyl Ether (ETBE)	244	50	2.8	ug/l	250	ND	98	60-140			
tert-Amyl Methyl Ether (TAME)	263	50	3.3	ug/l	250	ND	105	55-145			
Methyl-tert-butyl Ether (MTBE)	259	50	3.2	ug/l	250	ND	104	50-155			
tert-Butanol (TBA)	1250	500	31	ug/l	1250	150	88	65-145			
Ethanol	2010	1500	1000	ug/l	2500	ND	80	35-165			
Surrogate: Dibromofluoromethane	264			ug/l	250		106	80-120			
Surrogate: Toluene-d8	272			ug/l	250		109	80-120			
Surrogate: 4-Bromofluorobenzene	244			ug/l	250		98	80-120			

#### Del Mar Analytical, Irvine

%REC

SECOR International, Inc.-Thousand Oaks

Project ID: ARCO 0031, South Gate

290 Conejo Ridge Avenue, Suite 200 Thousand Oaks, CA 91361 Sampled: 11/16/04-11/17/04 Received: 11/17/04

RPD

Data

Attention: John Bollier

Report Number: INK1303 Received: 11/17/04

Source

#### METHOD BLANK/QC DATA

#### **VOLATILE ORGANICS with OXYGENATES by GC/MS (EPA 8260B)**

Spike

Reporting

		Keporung			Spike	Source		ONLU		KPD	Data
Analyte	Result	Limit	MDL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifiers
Batch: 4K27009 Extracted: 11/27	<u>/04</u>										
Matrix Spike Dup Analyzed: 11/27/04	(4K27000_MS	<b>D</b> 1)			Son	ırce: INK	1/30_01				
Benzene	260	<b>D1)</b> 20	2.8	ug/l	250	7.0	101	70-120	1	20	
Bromobenzene	235	50	2.7	ug/l	250	7.0 ND	94	65-130	0	20	
Bromochloromethane	252	50	3.2	ug/l ug/l	250 250	ND ND	101	65-140	0	25	
Bromodichloromethane	252	20	3.0	ug/l	250	ND ND	101	70-140	1	20	
Bromoform	233	50	3.2	ug/l	250	ND ND	88	55-140	2	25	
Bromomethane	255	50	3.4	ug/l	250	ND ND	102	50-145	4	25	
n-Butylbenzene	240	50	3.7	ug/l	250	ND ND	96	70-140	1	20	
sec-Butylbenzene	250	50	2.5	ug/l	250	ND ND	100	70-140	0	20	
tert-Butylbenzene	233	50	2.2	ug/l	250	ND ND	93	70-130	2	20	
Carbon tetrachloride	239	50	2.2	ug/l	250	ND ND	93 96	70-130	1	25	
Chlorobenzene	228	20	3.6	ug/l	250	ND ND	90 91	80-125	1	20	
Chloroethane	251	50	3.3	ug/l ug/l	250		100	50-125	4	25 25	
Chloroform	253	20	3.3	ug/l	250	ND ND	101	70-135	2	20	
Chloromethane	233	50	3.0	ug/l	250	ND ND	94	35-145	1	25	
2-Chlorotoluene	236	50	2.8		250 250		94	70-140	0	20	
4-Chlorotoluene	240	50	2.0	ug/l	250	ND	94 96	70-140	1	20	
Dibromochloromethane	240	20	2.9	ug/l	250	ND	90 90	65-145	0	25	
	264	50		ug/l		ND	106		3	30	
1,2-Dibromo-3-chloropropane	259	20	9.2 3.2	ug/l	250 250	ND	106	45-155 70-130	3 1	25	
1,2-Dibromoethane (EDB) Dibromomethane	239	20	3.6	ug/l	250	ND		65-140	2	25 25	
	244			ug/l		ND	98				
1,2-Dichlorobenzene 1,3-Dichlorobenzene	229	20 20	3.2 3.5	ug/l	250 250	ND	92	75-130 75-130	1	20 20	
<b>'</b>			3.7	ug/l		ND	90		0	20	
1,4-Dichlorobenzene	227	20		ug/l	250	ND	91	80-120			
Dichlorodifluoromethane	227	50	7.9	ug/l	250	ND	91	10-160	3	30	
1,1-Dichloroethane	247	20	2.7	ug/l	250	ND	99	65-135	0	20	
1,2-Dichloroethane	280	20	2.8	ug/l	250	44	94	60-150	0	20	
1,1-Dichloroethene	254	50	3.2	ug/l	250	ND	102	65-140	1	20	
cis-1,2-Dichloroethene	244	20	3.2	ug/l	250	ND	98	65-130	2	20	
trans-1,2-Dichloroethene	259	20	2.7	ug/l	250	ND	104	65-135	1	20	
1,2-Dichloropropane	238	20	3.5	ug/l	250	ND	95	65-130	1	20	
1,3-Dichloropropane	241	20	3.0	ug/l	250	ND	96	65-140	0	25 25	
2,2-Dichloropropane	260	20	2.9	ug/l	250	ND	104	60-150	1	25	
1,1-Dichloropropene	251	20	2.8	ug/l	250	ND	100	65-140	1	20	
cis-1,3-Dichloropropene	251	20	2.2	ug/l	250	ND	100	70-140	2	20	
trans-1,3-Dichloropropene	258	20	2.4	ug/l	250	ND	103	70-140	0	25	

#### **Del Mar Analytical, Irvine**

SECOR International, Inc.-Thousand Oaks 290 Conejo Ridge Avenue, Suite 200

Project ID: ARCO 0031, South Gate

Sampled: 11/16/04-11/17/04

Thousand Oaks, CA 91361 Attention: John Bollier

Report Number: INK1303 Received: 11/17/04

#### METHOD BLANK/QC DATA

#### **VOLATILE ORGANICS with OXYGENATES by GC/MS (EPA 8260B)**

Analyte         Result         Limit         MDL         Units         Level         Result         'AREC'         Limit         PDL         Qualifier           Batch: 4K27009 Extracted: 11/27/04           Matrix Spike Dup Analyzed: 11/27/04 (4K27009-WSUT)         "South State Sta
Matrix Spike Dup Analyzed: 11/27/04 (4K27009-MSD1)
Ethylbenzene   250   20   2.5   ugl   250   11   96   70-130   1   20     Hexachlorobutadiene   206   50   3.8   ugl   250   NID   82   65-140   1   20     Isopropylbenzene   264   20   2.5   ugl   250   NID   106   70-130   0   20     Pelsopropylbenzene   230   20   2.8   ugl   250   NID   106   60-135   1   20     Methylene chloride   266   50   4.8   ugl   250   NID   106   60-135   1   20     Naphthalene   253   50   4.1   ugl   250   0.5   99   50-150   7   30     n-Propylbenzene   248   20   2.7   ugl   250   0.5   99   50-150   7   30     Naphthalene   262   20   1.6   ugl   250   NID   105   55-145   2   30     1,1,2-Tetrachloroethane   235   50   2.7   ugl   250   NID   105   55-145   2   30     1,1,1,2-Tetrachloroethane   272   20   2.4   ugl   250   NID   109   60-145   1   30     Tetrachloroethane   272   20   2.4   ugl   250   NID   109   60-145   1   30     Tetrachloroethane   238   20   3.6   ugl   250   NID   94   70-145   2   20     1,2,3-Trichlorobenzene   223   50   4.5   ugl   250   NID   94   70-145   2   20     1,2,4-Trichloroethane   274   50   4.8   ugl   250   NID   96   60-140   6   20     1,1,1-Tichloroethane   244   20   3.0   ugl   250   NID   90   60-140   6   20     1,1,1-Tichloroethane   257   20   3.0   ugl   250   NID   90   60-140   6   20     1,1,1-Tichloroethane   250   20   3.0   ugl   250   NID   91   70-125   1   20     1,1,2-Tichloroethane   251   100   8.5   ugl   250   NID   91   70-125   1   20     1,1,2-Tichlorophane   251   100   8.5   ugl   250   NID   91   70-125   1   20     1,2,4-Timethylbenzene   263   20   2.6   ugl   250   NID   97   60-125   0   25     1,3,5-Trimethylbenzene   263   20   2.6   ugl   250   NID   87   40-135   14   30     1,2,4-Timethylbenzene   266   20   2.4   ugl   250   NID   87   40-135   14   30     1,2,4-Timethylbenzene   263   20   2.6   ugl   250   NID   87   40-135   14   30     1,2,4-Timethylbenzene   263   20   2.6   ugl   250   NID   87   40-135   14   30     1,2,4-Timethylbenzene   266   20   2.4   ugl   250   NID   87   60-125
Ethylbenzene   250   20   2.5   ugl   250   11   96   70-130   1   20     Hexachlorobutadiene   206   50   3.8   ugl   250   NID   82   65-140   1   20     Isopropylbenzene   264   20   2.5   ugl   250   NID   106   70-130   0   20     Pelsopropyltoluene   230   20   2.8   ugl   250   NID   106   60-135   1   20     Methylene chloride   266   50   4.8   ugl   250   NID   106   60-135   1   20     Naphthalene   253   50   4.1   ugl   250   0.5   99   50-150   7   30     n-Propylbenzene   262   20   1.6   ugl   250   NID   105   55-145   2   30     1,1,2,2-Tetrachloroethane   235   50   2.7   ugl   250   NID   105   55-145   2   30     1,1,1,2-Tetrachloroethane   235   50   2.7   ugl   250   NID   105   55-145   2   30     1,1,1,2-Tetrachloroethane   235   50   2.7   ugl   250   NID   105   55-145   2   30     1,1,1,2-Tetrachloroethane   277   20   2.4   ugl   250   NID   109   60-145   1   30     1,1,2-Tetrachloroethane   238   20   3.6   ugl   250   NID   109   60-145   1   30     1,1,2-Tichloroetnzene   223   50   4.5   ugl   250   NID   94   70-145   2   20     1,2,3-Trichloroetnzene   224   50   4.8   ugl   250   NID   95   60-140   6   20     1,1,1-Trichloroetnzene   224   50   4.8   ugl   250   NID   96   60-140   6   20     1,1,1-Trichloroethane   244   20   3.0   ugl   250   NID   96   60-140   3   20     1,1,1-Trichloroethane   250   20   3.0   ugl   250   NID   91   70-125   1   20     1,1,2-Tichloroethane   250   20   3.0   ugl   250   NID   91   70-125   1   20     1,1,2-Tichloroethane   251   100   8.5   ugl   250   NID   91   55-140   1   25     1,2,3-Trichloropopane   251   100   8.5   ugl   250   NID   91   70-125   1   20     1,2,4-Trimethylbenzene   275   20   2.3   ugl   250   NID   91   70-125   1   20     1,2,4-Trimethylbenzene   275   20   2.3   ugl   250   NID   96   60-125   0   25     1,3,5-Trimethylbenzene   266   20   2.4   ugl   250   NID   87   40-135   14   30     1,4 -4 -4 -4 -4 -4 -4 -4 -4 -4 -4 -4 -4 -4
Hexachlorobutadiene   206   50   3.8   ugl   250   ND   82   65-140   1   20
Sopropylbenzene   264   20   2.5   ughl   250   NID   106   70-130   0   20
P-Isopropyltoluene   230   20   2.8   ughl   250   NID   92   70-130   0   20     Methylene chloride   266   50   4.8   ughl   250   NID   106   60-135   1   20     Naphthalene   253   50   4.1   ughl   250   6.5   99   50-150   7   30     n-Propylbenzene   248   20   2.7   ughl   250   NID   105   55-145   2   30     1,1,1,2-Tetrachloroethane   235   50   2.7   ughl   250   NID   105   55-145   2   30     1,1,2-Tetrachloroethane   235   50   2.7   ughl   250   NID   105   55-145   2   20     1,1,2-Tetrachloroethane   230   20   2.4   ughl   250   NID   109   60-145   1   30     Tetrachloroethane   230   20   3.2   ughl   250   NID   109   60-145   1   30     Tetrachloroethane   238   20   3.6   ughl   250   NID   92   70-130   0   20     1,2,3-Trichlorobenzene   223   50   4.8   ughl   250   NID   89   60-140   6   20     1,1,1-Trichloroethane   244   20   3.0   ughl   250   NID   98   75-140   0   20     1,1,1-Trichloroethane   244   20   3.0   ughl   250   NID   98   75-140   0   20     1,1,1-Trichloroethane   250   20   3.0   ughl   250   NID   98   75-140   0   20     1,1,1-Trichloroethane   250   20   3.0   ughl   250   NID   98   75-140   0   20     1,1,1-Trichloroethane   262   50   3.4   ughl   250   NID   99   60-140   3   25     1,1,2-Trichloroethane   262   50   3.4   ughl   250   NID   100   60-135   1   25     1,2,3-Trichloroethane   262   50   3.4   ughl   250   NID   100   55-140   1   25     1,2,3-Trichloroethane   261   20   2.6   ughl   250   NID   105   55-145   1   25     1,2,3-Trichloroethane   262   50   3.4   ughl   250   NID   105   55-145   1   25     1,2,3-Trichloroethane   263   20   2.6   ughl   250   NID   105   55-145   1   25     1,2,3-Trichloroethane   263   20   2.6   ughl   250   NID   105   55-145   1   25     1,2,3-Trichloroethane   263   20   2.6   ughl   250   NID   105   55-145   1   25     1,2,3-Trichloroethane   263   20   2.6   ughl   250   NID   105   55-145   1   25     1,2,3-Trichloroethane   263   20   2.6   ughl   250   NID   105   55-145   1   25     1,2,3-Tric
Methylene chloride         266         50         4.8         ug/l         250         ND         106         60-135         1         20           Naphthalene         253         50         4.1         ug/l         250         6.5         99         50-150         7         30           Propylbenzene         248         20         2.7         ug/l         250         2.9         98         70-135         1         20           Styrene         262         20         1.6         ug/l         250         ND         105         55-145         2         30           1,1,2-Tetrachloroethane         235         50         2.7         ug/l         250         ND         109         60-145         1         30           1,1,2-Tetrachloroethane         230         20         2.4         ug/l         250         ND         90         60-145         1         30           Tetrachloroethane         230         20         3.2         ug/l         250         ND         90         60-140         6         20           1,2-Trichloroethane         223         50         4.5         ug/l         250         ND         90         60-140
N-Propylbenzene   248   20   2.7   ug/l   250   2.9   98   70-135   1   20
Styrene         262         20         1.6         ug/l         250         ND         105         55-145         2         30           1,1,1,2-Tetrachloroethane         235         50         2.7         ug/l         250         ND         94         70-145         2         20           1,1,2-Tetrachloroethane         272         20         2.4         ug/l         250         ND         109         60-145         1         30           Tetrachloroethane         230         20         3.2         ug/l         250         ND         92         70-130         0         20           Toluene         258         20         3.6         ug/l         250         ND         89         60-140         6         20           1,2,4-Trichlorobenzene         223         50         4.8         ug/l         250         ND         89         60-140         3         20           1,1,1-Trichlorobenzene         224         50         4.8         ug/l         250         ND         98         65-140         3         20           1,1,2-Trichloroethane         250         20         3.0         ug/l         250         ND         98 <th< td=""></th<>
1,1,1,2-Tetrachloroethane   235   50   2.7   ug/l   250   ND   94   70-145   2   20     1,1,2,2-Tetrachloroethane   272   20   2.4   ug/l   250   ND   109   60-145   1   30     Tetrachloroethene   230   20   3.2   ug/l   250   ND   92   70-130   0   20     Toluene   258   20   3.6   ug/l   250   ND   89   60-140   6   20     1,2,3-Trichlorobenzene   223   50   4.5   ug/l   250   ND   89   60-140   6   20     1,2,4-Trichloroethane   244   20   3.0   ug/l   250   ND   98   75-140   0   20     1,1,1-Trichloroethane   244   20   3.0   ug/l   250   ND   98   75-140   0   20     1,1,2-Trichloroethane   250   20   3.0   ug/l   250   ND   91   70-125   1   25     Trichloroethane   262   50   3.4   ug/l   250   ND   91   70-125   1   20     Trichlorofluoromethane   262   50   3.4   ug/l   250   ND   105   55-145   1   25     Trichloroptopane   251   100   8.5   ug/l   250   ND   100   55-140   1   30     1,2,4-Trimethylbenzene   275   20   2.6   ug/l   250   ND   100   55-140   1   30     1,2,3-Trichloropropane   251   100   8.5   ug/l   250   ND   100   55-140   1   30     1,2,4-Trimethylbenzene   275   20   2.3   ug/l   250   ND   100   55-140   1   30     1,2,4-Trimethylbenzene   263   20   2.6   ug/l   250   ND   87   40-135   14   30     1,3,5-Trimethylbenzene   263   20   2.6   ug/l   250   ND   87   40-135   14   30     0-Xylene   266   20   2.4   ug/l   250   ND   87   40-135   14   30     0-Xylene   266   20   2.4   ug/l   250   ND   87   65-125   2   20     M,p-Xylenes   542   20   5.2   ug/l   500   49   99   65-130   0   25     Xylenes, Total
1,1,2,2-Tetrachloroethane         272         20         2.4         ug/l         250         ND         109         60-145         1         30           Tetrachloroethene         230         20         3.2         ug/l         250         ND         92         70-130         0         20           Toluene         258         20         3.6         ug/l         250         26         93         70-120         0         20           1,2,3-Trichlorobenzene         223         50         4.5         ug/l         250         ND         89         60-140         6         20           1,2,4-Trichlorobenzene         224         50         4.8         ug/l         250         ND         90         60-140         3         20           1,1,1-Trichloroethane         244         20         3.0         ug/l         250         ND         98         75-140         0         20           1,1,2-Trichloroethane         250         20         3.0         ug/l         250         ND         90         60-135         1         25           Trichloroethane         262         50         3.4         ug/l         250         ND         91
Tetrachloroethene         230         20         3.2         ug/l         250         NID         92         70-130         0         20           Toluene         258         20         3.6         ug/l         250         26         93         70-120         0         20           1,2,3-Trichlorobenzene         223         50         4.5         ug/l         250         NID         89         60-140         6         20           1,2,4-Trichlorobenzene         224         50         4.8         ug/l         250         NID         90         60-140         3         20           1,1,1-Trichloroethane         244         20         3.0         ug/l         250         NID         98         75-140         0         20           1,1,2-Trichloroethane         250         20         3.0         ug/l         250         NID         98         75-140         0         20           1,1,2-Trichloroethane         250         20         3.4         ug/l         250         NID         91         70-125         1         25           Trichlorofluoromethane         262         50         3.4         ug/l         250         NID         100 </td
Toluene 258 20 3.6 ug/l 250 26 93 70-120 0 20 1,2,3-Trichlorobenzene 223 50 4.5 ug/l 250 NID 89 60-140 6 20 1,2,4-Trichlorobenzene 224 50 4.8 ug/l 250 NID 90 60-140 3 20 1,1,1-Trichloroethane 244 20 3.0 ug/l 250 NID 98 75-140 0 20 1,1,2-Trichloroethane 250 20 3.0 ug/l 250 NID 98 75-140 0 20 1,1,2-Trichloroethane 227 20 2.6 ug/l 250 NID 91 70-125 1 20 Trichlorofluoromethane 262 50 3.4 ug/l 250 NID 91 70-125 1 20 Trichlorofluoromethane 262 50 3.4 ug/l 250 NID 100 55-145 1 25 1,2,3-Trichloropopane 251 100 8.5 ug/l 250 NID 100 55-140 1 30 1,2,4-Trimethylbenzene 275 20 2.3 ug/l 250 NID 100 55-140 1 30 1,3,5-Trimethylbenzene 263 20 2.6 ug/l 250 NID 87 40-135 14 30 o-Xylene 266 20 2.4 ug/l 250 NID 87 40-135 14 30 o-Xylene 266 20 2.4 ug/l 250 Vig/l 500 49 99 65-130 0 25 Xylenes, Total 808 40 5.2 ug/l 750 73 98 65-135 1 20
1,2,3-Trichlorobenzene         223         50         4.5         ug/l         250         NID         89         60-140         6         20           1,2,4-Trichlorobenzene         224         50         4.8         ug/l         250         NID         90         60-140         3         20           1,1,1-Trichloroethane         244         20         3.0         ug/l         250         NID         98         75-140         0         20           1,1,2-Trichloroethane         250         20         3.0         ug/l         250         NID         100         60-135         1         25           Trichloroethane         227         20         2.6         ug/l         250         NID         91         70-125         1         25           Trichlorofluoromethane         262         50         3.4         ug/l         250         NID         105         55-145         1         25           1,2,3-Trichloropropane         251         100         8.5         ug/l         250         NID         100         55-140         1         30           1,2,4-Trimethylbenzene         263         20         2.6         ug/l         250         NID
1,2,3-Trichlorobenzene         223         50         4.5         ug/l         250         ND         89         60-140         6         20           1,2,4-Trichlorobenzene         224         50         4.8         ug/l         250         ND         90         60-140         3         20           1,1,1-Trichloroethane         244         20         3.0         ug/l         250         ND         98         75-140         0         20           1,1,2-Trichloroethane         250         20         3.0         ug/l         250         ND         100         60-135         1         25           Trichloroethane         227         20         2.6         ug/l         250         ND         91         70-125         1         25           Trichlorofluoromethane         262         50         3.4         ug/l         250         ND         105         55-145         1         25           1,2,3-Trichloropropane         251         100         8.5         ug/l         250         ND         100         55-140         1         30           1,2,4-Trimethylbenzene         263         20         2.6         ug/l         250         8.0
1,1,1-Trichloroethane       244       20       3.0       ug/l       250       ND       98       75-140       0       20         1,1,2-Trichloroethane       250       20       3.0       ug/l       250       ND       100       60-135       1       25         Trichloroethane       227       20       2.6       ug/l       250       ND       91       70-125       1       20         Trichlorofluoromethane       262       50       3.4       ug/l       250       ND       105       55-145       1       25         1,2,3-Trichloropropane       251       100       8.5       ug/l       250       ND       100       55-140       1       30         1,2,4-Trimethylbenzene       275       20       2.3       ug/l       250       28       99       60-125       0       25         1,3,5-Trimethylbenzene       263       20       2.6       ug/l       250       8.0       102       70-130       1       20         Vinyl chloride       218       50       2.6       ug/l       250       ND       87       40-135       14       30         o-Xylene       542       20       5.2<
1,1,2-Trichloroethane       250       20       3.0       ug/l       250       ND       100       60-135       1       25         Trichloroethene       227       20       2.6       ug/l       250       ND       91       70-125       1       20         Trichlorofluoromethane       262       50       3.4       ug/l       250       ND       105       55-145       1       25         1,2,3-Trichloropropane       251       100       8.5       ug/l       250       ND       100       55-140       1       30         1,2,4-Trimethylbenzene       275       20       2.3       ug/l       250       28       99       60-125       0       25         1,3,5-Trimethylbenzene       263       20       2.6       ug/l       250       8.0       102       70-130       1       20         Vinyl chloride       218       50       2.6       ug/l       250       ND       87       40-135       14       30         o-Xylene       266       20       2.4       ug/l       250       24       97       65-125       2       20         m,p-Xylenes       542       20       5.2
Trichloroethene         227         20         2.6         ug/l         250         NID         91         70-125         1         20           Trichlorofluoromethane         262         50         3.4         ug/l         250         NID         105         55-145         1         25           1,2,3-Trichloropropane         251         100         8.5         ug/l         250         NID         100         55-140         1         30           1,2,4-Trimethylbenzene         275         20         2.3         ug/l         250         28         99         60-125         0         25           1,3,5-Trimethylbenzene         263         20         2.6         ug/l         250         8.0         102         70-130         1         20           Vinyl chloride         218         50         2.6         ug/l         250         NID         87         40-135         14         30           o-Xylene         266         20         2.4         ug/l         250         24         97         65-125         2         20           m,p-Xylenes         542         20         5.2         ug/l         500         49         99 <td< td=""></td<>
Trichlorofluoromethane         262         50         3.4         ug/l         250         NID         105         55-145         1         25           1,2,3-Trichloropropane         251         100         8.5         ug/l         250         NID         100         55-140         1         30           1,2,4-Trimethylbenzene         275         20         2.3         ug/l         250         28         99         60-125         0         25           1,3,5-Trimethylbenzene         263         20         2.6         ug/l         250         8.0         102         70-130         1         20           Vinyl chloride         218         50         2.6         ug/l         250         NID         87         40-135         14         30           o-Xylene         266         20         2.4         ug/l         250         24         97         65-125         2         20           m,p-Xylenes         542         20         5.2         ug/l         500         49         99         65-135         1         20           Xylenes, Total         808         40         5.2         ug/l         750         73         98         6
1,2,3-Trichloropropane       251       100       8.5       ug/l       250       ND       100       55-140       1       30         1,2,4-Trimethylbenzene       275       20       2.3       ug/l       250       28       99       60-125       0       25         1,3,5-Trimethylbenzene       263       20       2.6       ug/l       250       8.0       102       70-130       1       20         Vinyl chloride       218       50       2.6       ug/l       250       ND       87       40-135       14       30         o-Xylene       266       20       2.4       ug/l       250       24       97       65-125       2       20         m,p-Xylenes       542       20       5.2       ug/l       500       49       99       65-130       0       25         Xylenes, Total       808       40       5.2       ug/l       750       73       98       65-135       1       20
1,2,4-Trimethylbenzene       275       20       2.3       ug/l       250       28       99       60-125       0       25         1,3,5-Trimethylbenzene       263       20       2.6       ug/l       250       8.0       102       70-130       1       20         Vinyl chloride       218       50       2.6       ug/l       250       ND       87       40-135       14       30         o-Xylene       266       20       2.4       ug/l       250       24       97       65-125       2       20         m,p-Xylenes       542       20       5.2       ug/l       500       49       99       65-130       0       25         Xylenes, Total       808       40       5.2       ug/l       750       73       98       65-135       1       20
1,3,5-Trimethylbenzene       263       20       2.6       ug/l       250       8.0       102       70-130       1       20         Vinyl chloride       218       50       2.6       ug/l       250       ND       87       40-135       14       30         o-Xylene       266       20       2.4       ug/l       250       24       97       65-125       2       20         m,p-Xylenes       542       20       5.2       ug/l       500       49       99       65-130       0       25         Xylenes, Total       808       40       5.2       ug/l       750       73       98       65-135       1       20
Vinyl chloride         218         50         2.6         ug/l         250         ND         87         40-135         14         30           o-Xylene         266         20         2.4         ug/l         250         24         97         65-125         2         20           m,p-Xylenes         542         20         5.2         ug/l         500         49         99         65-130         0         25           Xylenes, Total         808         40         5.2         ug/l         750         73         98         65-135         1         20
o-Xylene     266     20     2.4     ug/l     250     24     97     65-125     2     20       m,p-Xylenes     542     20     5.2     ug/l     500     49     99     65-130     0     25       Xylenes, Total     808     40     5.2     ug/l     750     73     98     65-135     1     20
m,p-Xylenes 542 20 5.2 ug/l 500 49 99 65-130 0 25 Xylenes, Total 808 40 5.2 ug/l 750 73 98 65-135 1 20
Xylenes, Total 808 40 5.2 ug/l 750 73 98 65-135 1 20
Di-isopropyl Ether (DIPE) 269 50 2.5 ug/l 250 12 103 65-140 1 25
Ethyl tert-Butyl Ether (ETBE) 246 50 2.8 ug/l 250 ND 98 60-140 1 25
tert-Amyl Methyl Ether (TAME) 266 50 3.3 ug/l 250 ND 106 55-145 1 30
Methyl-tert-butyl Ether (MTBE) 263 50 3.2 ug/l 250 ND 105 50-155 2 25
tert-Butanol (TBA) 1240 500 31 ug/l 1250 150 87 65-145 1 25
Ethanol 1960 1500 1000 ug/l 2500 ND 78 35-165 3 30
Surrogate: Dibromofluoromethane 263 ug/l 250 105 80-120
Surrogate: Toluene-d8 271 ug/l 250 108 80-120
Surrogate: 4-Bromofluorobenzene 244 ug/l 250 98 80-120

#### Del Mar Analytical, Irvine

SECOR International, Inc.-Thousand Oaks 290 Conejo Ridge Avenue, Suite 200

Project ID: ARCO 0031, South Gate

Sampled: 11/16/04-11/17/04

Thousand Oaks, CA 91361 Attention: John Bollier Report Number: INK1303 Received: 11/17/04

#### METHOD BLANK/QC DATA

#### **VOLATILE ORGANICS with OXYGENATES by GC/MS (EPA 8260B)**

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC	RPD	RPD Limit	Data Qualifiers
•		Limit	MIDE	Cints	Level	Result	/ortec	Limits	KI D	Limit	Quamiers
Batch: 4K28012 Extracted: 11/28/0	4_										
Blank Analyzed: 11/28/04 (4K28012-BI	LK1)										
Benzene	ND	2.0	0.28	ug/l							
Bromobenzene	ND	5.0	0.27	ug/l							
Bromochloromethane	ND	5.0	0.32	ug/l							
Bromodichloromethane	ND	2.0	0.30	ug/l							
Bromoform	ND	5.0	0.32	ug/l							
Bromomethane	ND	5.0	0.34	ug/l							
n-Butylbenzene	ND	5.0	0.37	ug/l							
sec-Butylbenzene	ND	5.0	0.25	ug/l							
tert-Butylbenzene	ND	5.0	0.22	ug/l							
Carbon tetrachloride	ND	5.0	0.28	ug/l							
Chlorobenzene	ND	2.0	0.36	ug/l							
Chloroethane	ND	5.0	0.33	ug/l							
Chloroform	ND	2.0	0.33	ug/l							
Chloromethane	ND	5.0	0.30	ug/l							
2-Chlorotoluene	ND	5.0	0.28	ug/l							
4-Chlorotoluene	ND	5.0	0.29	ug/l							
Dibromochloromethane	ND	2.0	0.28	ug/l							
1,2-Dibromo-3-chloropropane	ND	5.0	0.92	ug/l							
1,2-Dibromoethane (EDB)	ND	2.0	0.32	ug/l							
Dibromomethane	ND	2.0	0.36	ug/l							
1,2-Dichlorobenzene	ND	2.0	0.32	ug/l							
1,3-Dichlorobenzene	ND	2.0	0.35	ug/l							
1,4-Dichlorobenzene	ND	2.0	0.37	ug/l							
Dichlorodifluoromethane	ND	5.0	0.79	ug/l							
1,1-Dichloroethane	ND	2.0	0.27	ug/l							
1,2-Dichloroethane	ND	2.0	0.28	ug/l							
1,1-Dichloroethene	ND	5.0	0.32	ug/l							
cis-1,2-Dichloroethene	ND	2.0	0.32	ug/l							
trans-1,2-Dichloroethene	ND	2.0	0.27	ug/l							
1,2-Dichloropropane	ND	2.0	0.35	ug/l							
1,3-Dichloropropane	ND	2.0	0.30	ug/l							
2,2-Dichloropropane	ND	2.0	0.29	ug/l							
1,1-Dichloropropene	ND	2.0	0.28	ug/l							
cis-1,3-Dichloropropene	ND	2.0	0.22	ug/l							
trans-1,3-Dichloropropene	ND	2.0	0.24	ug/l							
				-							

#### **Del Mar Analytical, Irvine**

%REC

SECOR International, Inc.-Thousand Oaks

Project ID: ARCO 0031, South Gate

290 Conejo Ridge Avenue, Suite 200 Thousand Oaks, CA 91361 Sampled: 11/16/04-11/17/04

RPD

Data

Attention: John Bollier

Report Number: INK1303 Received: 11/17/04

Source

Spike

#### METHOD BLANK/QC DATA

#### **VOLATILE ORGANICS with OXYGENATES by GC/MS (EPA 8260B)**

Reporting

		Keporung			Spike	Source		ONEC		KrD	Data
Analyte	Result	Limit	MDL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifiers
Batch: 4K28012 Extracted: 11/28	3/04_										
Blank Analyzed: 11/28/04 (4K28012-	BLK1)										
Ethylbenzene	ND	2.0	0.25	ug/1							
Hexachlorobutadiene	ND	5.0	0.38	ug/l							
Isopropylbenzene	ND	2.0	0.25	ug/l							
p-Isopropyltoluene	ND	2.0	0.28	ug/1							
Methylene chloride	ND	5.0	0.48	ug/l							
Naphthalene	ND	5.0	0.41	ug/l							
n-Propylbenzene	ND	2.0	0.27	ug/l							
Styrene	ND	2.0	0.16	ug/l							
1,1,1,2-Tetrachloroethane	ND	5.0	0.27	ug/l							
1,1,2,2-Tetrachloroethane	ND	2.0	0.24	ug/l							
Tetrachloroethene	ND	2.0	0.32	ug/l							
Toluene	ND	2.0	0.36	ug/l							
1,2,3-Trichlorobenzene	ND	5.0	0.45	ug/l							
1,2,4-Trichlorobenzene	ND	5.0	0.48	ug/l							
1,1,1-Trichloroethane	ND	2.0	0.30	ug/l							
1,1,2-Trichloroethane	ND	2.0	0.30	ug/l							
Trichloroethene	ND	2.0	0.26	ug/l							
Trichlorofluoromethane	ND	5.0	0.34	ug/l							
1,2,3-Trichloropropane	ND	10	0.85	ug/l							
1,2,4-Trimethylbenzene	ND	2.0	0.23	ug/l							
1,3,5-Trimethylbenzene	ND	2.0	0.26	ug/l							
Vinyl chloride	ND	5.0	0.26	ug/l							
o-Xylene	ND	2.0	0.24	ug/l							
m,p-Xylenes	ND	2.0	0.52	ug/l							
Xylenes, Total	ND	4.0	0.52	ug/l							
Di-isopropyl Ether (DIPE)	ND	5.0	0.25	ug/l							
Ethyl tert-Butyl Ether (ETBE)	ND	5.0	0.28	ug/l							
tert-Amyl Methyl Ether (TAME)	ND	5.0	0.33	ug/l							
Methyl-tert-butyl Ether (MTBE)	ND	5.0	0.32	ug/l							
tert-Butanol (TBA)	ND	50	3.1	ug/l							
Ethanol	ND	150	100	ug/l							
Surrogate: Dibromofluoromethane	26.8			ug/l	25.0		107	80-120			
Surrogate: Toluene-d8	26.8			ug/l	25.0		107	80-120			
Surrogate: 4-Bromofluorobenzene	24.4			ug/l	25.0		98	80-120			

#### Del Mar Analytical, Irvine

SECOR International, Inc.-Thousand Oaks

Project ID: ARCO 0031, South Gate

290 Conejo Ridge Avenue, Suite 200

Sampled: 11/16/04-11/17/04 Received: 11/17/04

Thousand Oaks, CA 91361 Attention: John Bollier Report Number: INK1303 Received: 11/17/04

#### METHOD BLANK/QC DATA

#### **VOLATILE ORGANICS with OXYGENATES by GC/MS (EPA 8260B)**

Analyte	Result	Reporting Limit	MDI.	Units	Spike Level	Source Result	%REC	%REC	RPD	RPD Limit	Data Qualifiers
•		Limit	HILL	Chits	Level	Kesun	70REC	Limites	MI D	Linni	Qualificis
<b>Batch: 4K28012 Extracted: 11/28/0-</b>	<u>.</u>										
LCS Analyzed: 11/28/04 (4K28012-BS1)	)										
Benzene	27.3	2.0	0.28	ug/l	25.0		109	70-120			
Bromobenzene	25.1	5.0	0.27	ug/l	25.0		100	80-120			
Bromochloromethane	26.8	5.0	0.32	ug/l	25.0		107	65-135			
Bromodichloromethane	27.4	2.0	0.30	ug/l	25.0		110	70-140			
Bromoform	21.9	5.0	0.32	ug/l	25.0		88	55-135			
Bromomethane	28.9	5.0	0.34	ug/l	25.0		116	60-140			
n-Butylbenzene	27.0	5.0	0.37	ug/l	25.0		108	75-130			
sec-Butylbenzene	27.3	5.0	0.25	ug/l	25.0		109	75-125			
tert-Butylbenzene	25.5	5.0	0.22	ug/l	25.0		102	75-125			
Carbon tetrachloride	26.2	5.0	0.28	ug/l	25.0		105	70-140			
Chlorobenzene	24.2	2.0	0.36	ug/l	25.0		97	80-125			
Chloroethane	28.0	5.0	0.33	ug/l	25.0		112	60-145			
Chloroform	27.2	2.0	0.33	ug/l	25.0		109	75-130			
Chloromethane	27.7	5.0	0.30	ug/l	25.0		111	40-145			
2-Chlorotoluene	26.2	5.0	0.28	ug/l	25.0		105	75-125			
4-Chlorotoluene	26.6	5.0	0.29	ug/l	25.0		106	75-125			
Dibromochloromethane	23.1	2.0	0.28	ug/l	25.0		92	65-145			
1,2-Dibromo-3-chloropropane	24.5	5.0	0.92	ug/l	25.0		98	50-135			
1,2-Dibromoethane (EDB)	26.0	2.0	0.32	ug/l	25.0		104	75-125			
Dibromomethane	25.2	2.0	0.36	ug/l	25.0		101	75-130			
1,2-Dichlorobenzene	24.6	2.0	0.32	ug/l	25.0		98	80-120			
1,3-Dichlorobenzene	24.4	2.0	0.35	ug/l	25.0		98	80-120			
1,4-Dichlorobenzene	24.9	2.0	0.37	ug/l	25.0		100	80-120			
Dichlorodifluoromethane	30.0	5.0	0.79	ug/l	25.0		120	10-160			
1,1-Dichloroethane	27.0	2.0	0.27	ug/l	25.0		108	70-135			
1,2-Dichloroethane	24.5	2.0	0.28	ug/l	25.0		98	60-150			
1,1-Dichloroethene	28.1	5.0	0.32	ug/l	25.0		112	75-135			
cis-1,2-Dichloroethene	26.2	2.0	0.32	ug/l	25.0		105	70-125			
trans-1,2-Dichloroethene	28.3	2.0	0.27	ug/l	25.0		113	70-130			
1,2-Dichloropropane	25.7	2.0	0.35	ug/l	25.0		103	70-120			
1,3-Dichloropropane	25.0	2.0	0.30	ug/l	25.0		100	70-130			
2,2-Dichloropropane	28.2	2.0	0.29	ug/l	25.0		113	65-150			
1,1-Dichloropropene	27.2	2.0	0.28	ug/l	25.0		109	75-130			
cis-1,3-Dichloropropene	26.9	2.0	0.22	ug/l	25.0		108	75-130			
trans-1,3-Dichloropropene	27.0	2.0	0.24	ug/l	25.0		108	75-135			

#### **Del Mar Analytical, Irvine**

SECOR International, Inc.-Thousand Oaks 290 Conejo Ridge Avenue, Suite 200

Project ID: ARCO 0031, South Gate

Sampled: 11/16/04-11/17/04 Report Number: INK1303

Attention: John Bollier

Thousand Oaks, CA 91361

Received: 11/17/04

#### METHOD BLANK/QC DATA

### **VOLATILE ORGANICS with OXYGENATES by GC/MS (EPA 8260B)**

		Reporting			Spike	Source		%REC		RPD	Data
Analyte	Result	Limit	MDL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifiers
Batch: 4K28012 Extracted: 11/28/04	_										
LCS Analyzed: 11/28/04 (4K28012-BS1)											
Ethylbenzene	25.7	2.0	0.25	ug/1	25.0		103	80-120			
Hexachlorobutadiene	22.9	5.0	0.38	ug/l	25.0		92	65-140			
Isopropylbenzene	28.4	2.0	0.25	ug/l	25.0		114	75-125			
p-Isopropyltoluene	25.3	2.0	0.28	ug/1	25.0		101	75-125			
Methylene chloride	29.2	5.0	0.48	ug/l	25.0		117	60-135			
Naphthalene	23.2	5.0	0.41	ug/l	25.0		93	50-145			
n-Propylbenzene	27.4	2.0	0.27	ug/l	25.0		110	75-130			
Styrene	27.5	2.0	0.16	ug/l	25.0		110	80-135			
1,1,1,2-Tetrachloroethane	24.7	5.0	0.27	ug/l	25.0		99	70-145			
1,1,2,2-Tetrachloroethane	26.8	2.0	0.24	ug/l	25.0		107	60-135			
Tetrachloroethene	24.4	2.0	0.32	ug/l	25.0		98	75-125			
Toluene	24.8	2.0	0.36	ug/l	25.0		99	75-120			
1,2,3-Trichlorobenzene	23.5	5.0	0.45	ug/l	25.0		94	65-135			
1,2,4-Trichlorobenzene	24.8	5.0	0.48	ug/l	25.0		99	70-140			
1,1,1-Trichloroethane	26.8	2.0	0.30	ug/l	25.0		107	75-140			
1,1,2-Trichloroethane	25.0	2.0	0.30	ug/l	25.0		100	70-125			
Trichloroethene	24.7	2.0	0.26	ug/l	25.0		99	80-120			
Trichlorofluoromethane	29.5	5.0	0.34	ug/l	25.0		118	65-145			
1,2,3-Trichloropropane	25.0	10	0.85	ug/l	25.0		100	60-130			
1,2,4-Trimethylbenzene	27.3	2.0	0.23	ug/l	25.0		109	75-125			
1,3,5-Trimethylbenzene	27.9	2.0	0.26	ug/l	25.0		112	75-125			
Vinyl chloride	25.6	5.0	0.26	ug/l	25.0		102	50-130			
o-Xylene	25.4	2.0	0.24	ug/l	25.0		102	75-125			
m,p-Xylenes	53.0	2.0	0.52	ug/l	50.0		106	75-120			
Xylenes, Total	78.4	4.0	0.52	ug/l	75.0		105	75-125			
Di-isopropyl Ether (DIPE)	27.9	5.0	0.25	ug/l	25.0		112	65-135			
Ethyl tert-Butyl Ether (ETBE)	26.5	5.0	0.28	ug/l	25.0		106	60-140			
tert-Amyl Methyl Ether (TAME)	28.1	5.0	0.33	ug/l	25.0		112	60-140			
Methyl-tert-butyl Ether (MTBE)	27.3	5.0	0.32	ug/l	25.0		109	55-145			
tert-Butanol (TBA)	117	50	3.1	ug/l	125		94	70-140			
Ethanol	240	150	100	ug/l	250		96	35-165			
Surrogate: Dibromofluoromethane	26.6			ug/l	25.0		106	80-120			
Surrogate: Toluene-d8	27.0			ug/l	25.0		108	80-120			
Surrogate: 4-Bromofluorobenzene	24.4			ug/l	25.0		98	80-120			
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#### Del Mar Analytical, Irvine

SECOR International, Inc.-Thousand Oaks 290 Conejo Ridge Avenue, Suite 200

Project ID: ARCO 0031, South Gate

Report Number: INK1303

Sampled: 11/16/04-11/17/04

Thousand Oaks, CA 91361 Attention: John Bollier

Received: 11/17/04

#### METHOD BLANK/QC DATA

#### **VOLATILE ORGANICS with OXYGENATES by GC/MS (EPA 8260B)**

A m chisto	Dogult	Reporting Limit	MDI	I Index	Spike	Source	0/ DEC	%REC	DDD	RPD	Data Qualifiers
Analyte	Result	Limit	MDL	Units	Level	Resuit	%REC	Limits	RPD	Limit	Quanners
Batch: 4K28012 Extracted: 11/28/0	4										
Matrix Spike Analyzed: 11/28/04 (4K28	· · · · · ·					rce: INK					
Benzene	29.6	2.0	0.28	ug/l	25.0	ND	118	70-120			
Bromobenzene	27.9	5.0	0.27	ug/l	25.0	ND	112	65-130			
Bromochloromethane	29.9	5.0	0.32	ug/l	25.0	ND	120	65-140			
Bromodichloromethane	30.2	2.0	0.30	ug/l	25.0	ND	121	70-140			
Bromoform	25.1	5.0	0.32	ug/l	25.0	ND	100	55-140			
Bromomethane	31.8	5.0	0.34	ug/l	25.0	ND	127	50-145			
n-Butylbenzene	29.2	5.0	0.37	ug/l	25.0	ND	117	70-140			
sec-Butylbenzene	29.5	5.0	0.25	ug/l	25.0	ND	118	70-130			
tert-Butylbenzene	27.8	5.0	0.22	ug/l	25.0	ND	111	70-130			
Carbon tetrachloride	28.4	5.0	0.28	ug/l	25.0	ND	114	70-145			
Chlorobenzene	26.4	2.0	0.36	ug/l	25.0	ND	106	80-125			
Chloroethane	31.0	5.0	0.33	ug/l	25.0	ND	124	50-145			
Chloroform	30.3	2.0	0.33	ug/l	25.0	ND	121	70-135			
Chloromethane	30.8	5.0	0.30	ug/l	25.0	ND	123	35-145			
2-Chlorotoluene	28.0	5.0	0.28	ug/l	25.0	ND	112	70-140			
4-Chlorotoluene	28.6	5.0	0.29	ug/l	25.0	ND	114	70-140			
Dibromochloromethane	26.2	2.0	0.28	ug/l	25.0	ND	105	65-145			
1,2-Dibromo-3-chloropropane	30.2	5.0	0.92	ug/l	25.0	ND	121	45-155			
1,2-Dibromoethane (EDB)	29.9	2.0	0.32	ug/l	25.0	ND	120	70-130			
Dibromomethane	28.7	2.0	0.36	ug/l	25.0	ND	115	65-140			
1,2-Dichlorobenzene	27.3	2.0	0.32	ug/l	25.0	ND	109	75-130			
1,3-Dichlorobenzene	26.9	2.0	0.35	ug/l	25.0	ND	108	75-130			
1,4-Dichlorobenzene	27.3	2.0	0.37	ug/l	25.0	ND	109	80-120			
Dichlorodifluoromethane	34.5	5.0	0.79	ug/l	25.0	ND	138	10-160			
1,1-Dichloroethane	29.4	2.0	0.27	ug/l	25.0	ND	118	65-135			
1,2-Dichloroethane	27.8	2.0	0.28	ug/l	25.0	ND	111	60-150			
1,1-Dichloroethene	30.4	5.0	0.32	ug/l	25.0	ND	122	65-140			
cis-1,2-Dichloroethene	28.7	2.0	0.32	ug/l	25.0	ND	115	65-130			
trans-1,2-Dichloroethene	30.6	2.0	0.27	ug/l	25.0	ND	122	65-135			
1,2-Dichloropropane	28.0	2.0	0.35	ug/l	25.0	ND	112	65-130			
1,3-Dichloropropane	28.9	2.0	0.30	ug/l	25.0	ND	116	65-140			
2,2-Dichloropropane	31.8	2.0	0.29	ug/l	25.0	ND	127	60-150			
1,1-Dichloropropene	29.4	2.0	0.28	ug/l	25.0	ND	118	65-140			
cis-1,3-Dichloropropene	29.8	2.0	0.22	ug/l	25.0	ND	119	70-140			
trans-1,3-Dichloropropene	30.7	2.0	0.24	ug/l	25.0	ND	123	70-140			
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#### Del Mar Analytical, Irvine

SECOR International, Inc.-Thousand Oaks 290 Conejo Ridge Avenue, Suite 200

Project ID: ARCO 0031, South Gate

Sampled: 11/16/04-11/17/04

Thousand Oaks, CA 91361 Attention: John Bollier

Report Number: INK1303 Received: 11/17/04

#### METHOD BLANK/QC DATA

#### **VOLATILE ORGANICS with OXYGENATES by GC/MS (EPA 8260B)**

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 4K28012 Extracted: 11/28/04	_										
	-										
Matrix Spike Analyzed: 11/28/04 (4K280	12-MS1)				Sou	rce: INK	1387-04				
Ethylbenzene	28.0	2.0	0.25	ug/l	25.0	ND	112	70-130			
Hexachlorobutadiene	24.6	5.0	0.38	ug/l	25.0	ND	98	65-140			
Isopropylbenzene	30.6	2.0	0.25	ug/l	25.0	ND	122	70-130			
p-Isopropyltoluene	27.3	2.0	0.28	ug/l	25.0	ND	109	70-130			
Methylene chloride	31.7	5.0	0.48	ug/l	25.0	ND	127	60-135			
Naphthalene	27.7	5.0	0.41	ug/l	25.0	ND	111	50-150			
n-Propylbenzene	29.4	2.0	0.27	ug/l	25.0	ND	118	70-135			
Styrene	6.64	2.0	0.16	ug/l	25.0	ND	27	55-145			LN, $AY$
1,1,1,2-Tetrachloroethane	27.0	5.0	0.27	ug/l	25.0	ND	108	70-145			
1,1,2,2-Tetrachloroethane	32.3	2.0	0.24	ug/l	25.0	ND	129	60-145			
Tetrachloroethene	26.5	2.0	0.32	ug/l	25.0	ND	106	70-130			
Toluene	27.2	2.0	0.36	ug/l	25.0	ND	109	70-120			
1,2,3-Trichlorobenzene	26.4	5.0	0.45	ug/l	25.0	ND	106	60-140			
1,2,4-Trichlorobenzene	27.0	5.0	0.48	ug/l	25.0	ND	108	60-140			
1,1,1-Trichloroethane	29.4	2.0	0.30	ug/l	25.0	ND	118	75-140			
1,1,2-Trichloroethane	28.8	2.0	0.30	ug/l	25.0	ND	115	60-135			
Trichloroethene	26.4	2.0	0.26	ug/l	25.0	ND	106	70-125			
Trichlorofluoromethane	32.7	5.0	0.34	ug/l	25.0	ND	131	55-145			
1,2,3-Trichloropropane	30.1	10	0.85	ug/l	25.0	ND	120	55-140			
1,2,4-Trimethylbenzene	29.6	2.0	0.23	ug/l	25.0	ND	118	60-125			
1,3,5-Trimethylbenzene	30.1	2.0	0.26	ug/l	25.0	ND	120	70-130			
Vinyl chloride	27.6	5.0	0.26	ug/l	25.0	ND	110	40-135			
o-Xylene	27.7	2.0	0.24	ug/l	25.0	ND	111	65-125			
m,p-Xylenes	57.7	2.0	0.52	ug/l	50.0	ND	115	65-130			
Xylenes, Total	85.4	4.0	0.52	ug/l	75.0	ND	114	65-135			
Di-isopropyl Ether (DIPE)	31.1	5.0	0.25	ug/l	25.0	ND	124	65-140			
Ethyl tert-Butyl Ether (ETBE)	29.7	5.0	0.28	ug/l	25.0	ND	119	60-140			
tert-Amyl Methyl Ether (TAME)	32.5	5.0	0.33	ug/l	25.0	ND	130	55-145			
Methyl-tert-butyl Ether (MTBE)	32.4	5.0	0.32	ug/l	25.0	ND	130	50-155			
tert-Butanol (TBA)	133	50	3.1	ug/l	125	ND	106	65-145			
Ethanol	260	150	100	ug/l	250	ND	104	35-165			
Surrogate: Dibromofluoromethane	26.4			ug/l	25.0		106	80-120			
Surrogate: Toluene-d8	26.3			ug/l	25.0		105	80-120			
Surrogate: 4-Bromofluorobenzene	23.7			ug/l	25.0		95	80-120			

#### Del Mar Analytical, Irvine

SECOR International, Inc.-Thousand Oaks 290 Conejo Ridge Avenue, Suite 200

Project ID: ARCO 0031, South Gate

Sampled: 11/16/04-11/17/04

%REC

RPD

Data

Thousand Oaks, CA 91361 Attention: John Bollier Report Number: INK1303 Received: 11/17/04

Source

Spike

#### METHOD BLANK/QC DATA

#### **VOLATILE ORGANICS with OXYGENATES by GC/MS (EPA 8260B)**

Reporting

Analyte	Result	Limit	MDL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifiers
·		Limit	MIDE	Omes	Level	Kesun	ORLC	Limites	KI D	Limit	Quamiers
<b>Batch: 4K28012 Extracted: 11/28/</b>	<u>'04_</u>										
Matrix Spike Dup Analyzed: 11/28/04	(4K28012-MS	SD1)			Sou	rce: INK	1387-04				
Benzene	28.3	2.0	0.28	ug/l	25.0	ND	113	70-120	4	20	
Bromobenzene	26.7	5.0	0.27	ug/l	25.0	ND	107	65-130	4	20	
Bromochloromethane	28.6	5.0	0.32	ug/l	25.0	ND	114	65-140	4	25	
Bromodichloromethane	28.8	2.0	0.30	ug/l	25.0	ND	115	70-140	5	20	
Bromoform	25.7	5.0	0.32	ug/l	25.0	ND	103	55-140	2	25	
Bromomethane	31.4	5.0	0.34	ug/l	25.0	ND	126	50-145	1	25	
n-Butylbenzene	27.4	5.0	0.37	ug/l	25.0	ND	110	70-140	6	20	
sec-Butylbenzene	28.4	5.0	0.25	ug/l	25.0	ND	114	70-130	4	20	
tert-Butylbenzene	26.4	5.0	0.22	ug/l	25.0	ND	106	70-130	5	20	
Carbon tetrachloride	26.9	5.0	0.28	ug/l	25.0	ND	108	70-145	5	25	
Chlorobenzene	24.8	2.0	0.36	ug/l	25.0	ND	99	80-125	6	20	
Chloroethane	30.6	5.0	0.33	ug/l	25.0	ND	122	50-145	1	25	
Chloroform	28.4	2.0	0.33	ug/l	25.0	ND	114	70-135	6	20	
Chloromethane	30.0	5.0	0.30	ug/l	25.0	ND	120	35-145	3	25	
2-Chlorotoluene	26.9	5.0	0.28	ug/l	25.0	ND	108	70-140	4	20	
4-Chlorotoluene	27.2	5.0	0.29	ug/l	25.0	ND	109	70-140	5	20	
Dibromochloromethane	25.2	2.0	0.28	ug/l	25.0	ND	101	65-145	4	25	
1,2-Dibromo-3-chloropropane	31.9	5.0	0.92	ug/l	25.0	ND	128	45-155	5	30	
1,2-Dibromoethane (EDB)	29.6	2.0	0.32	ug/l	25.0	ND	118	70-130	1	25	
Dibromomethane	28.0	2.0	0.36	ug/l	25.0	ND	112	65-140	2	25	
1,2-Dichlorobenzene	26.0	2.0	0.32	ug/l	25.0	ND	104	75-130	5	20	
1,3-Dichlorobenzene	25.4	2.0	0.35	ug/1	25.0	ND	102	75-130	6	20	
1,4-Dichlorobenzene	26.2	2.0	0.37	ug/l	25.0	ND	105	80-120	4	20	
Dichlorodifluoromethane	33.1	5.0	0.79	ug/l	25.0	ND	132	10-160	4	30	
1,1-Dichloroethane	27.6	2.0	0.27	ug/l	25.0	ND	110	65-135	6	20	
1,2-Dichloroethane	26.5	2.0	0.28	ug/l	25.0	ND	106	60-150	5	20	
1,1-Dichloroethene	28.7	5.0	0.32	ug/l	25.0	ND	115	65-140	6	20	
cis-1,2-Dichloroethene	27.2	2.0	0.32	ug/l	25.0	ND	109	65-130	5	20	
trans-1,2-Dichloroethene	29.3	2.0	0.27	ug/l	25.0	ND	117	65-135	4	20	
1,2-Dichloropropane	26.5	2.0	0.35	ug/l	25.0	ND	106	65-130	6	20	
1,3-Dichloropropane	27.8	2.0	0.30	ug/l	25.0	ND	111	65-140	4	25	
2,2-Dichloropropane	30.6	2.0	0.29	ug/l	25.0	ND	122	60-150	4	25	
1,1-Dichloropropene	27.8	2.0	0.28	ug/l	25.0	ND	111	65-140	6	20	
cis-1,3-Dichloropropene	28.5	2.0	0.22	ug/l	25.0	ND	114	70-140	4	20	
trans-1,3-Dichloropropene	29.5	2.0	0.24	ug/l	25.0	ND	118	70-140	4	25	

#### **Del Mar Analytical, Irvine**

SECOR International, Inc.-Thousand Oaks

Project ID: ARCO 0031, South Gate

290 Conejo Ridge Avenue, Suite 200 Thousand Oaks, CA 91361

Report Number: INK1303

Attention: John Bollier

Received: 11/17/04

Sampled: 11/16/04-11/17/04

#### METHOD BLANK/QC DATA

#### **VOLATILE ORGANICS with OXYGENATES by GC/MS (EPA 8260B)**

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 4K28012 Extracted: 11/28/0	)4_										
Matrix Spike Dup Analyzed: 11/28/04		*				rce: INK	1387-04				
Ethylbenzene	26.5	2.0	0.25	ug/l	25.0	ND	106	70-130	6	20	
Hexachlorobutadiene	22.9	5.0	0.38	ug/l	25.0	ND	92	65-140	7	20	
Isopropylbenzene	28.9	2.0	0.25	ug/l	25.0	ND	116	70-130	6	20	
p-Isopropyltoluene	26.0	2.0	0.28	ug/l	25.0	ND	104	70-130	5	20	
Methylene chloride	29.6	5.0	0.48	ug/l	25.0	ND	118	60-135	7	20	
Naphthalene	27.7	5.0	0.41	ug/l	25.0	ND	111	50-150	0	30	
n-Propylbenzene	27.9	2.0	0.27	ug/l	25.0	ND	112	70-135	5	20	
Styrene	5.30	2.0	0.16	ug/l	25.0	ND	21	55-145	22	30	LN, $AY$
1,1,1,2-Tetrachloroethane	25.8	5.0	0.27	ug/l	25.0	ND	103	70-145	5	20	
1,1,2,2-Tetrachloroethane	33.5	2.0	0.24	ug/l	25.0	ND	134	60-145	4	30	
Tetrachloroethene	25.1	2.0	0.32	ug/l	25.0	ND	100	70-130	5	20	
Toluene	25.8	2.0	0.36	ug/l	25.0	ND	103	70-120	5	20	
1,2,3-Trichlorobenzene	25.3	5.0	0.45	ug/l	25.0	ND	101	60-140	4	20	
1,2,4-Trichlorobenzene	25.2	5.0	0.48	ug/l	25.0	ND	101	60-140	7	20	
1,1,1-Trichloroethane	27.7	2.0	0.30	ug/l	25.0	ND	111	75-140	6	20	
1,1,2-Trichloroethane	28.6	2.0	0.30	ug/l	25.0	ND	114	60-135	1	25	
Trichloroethene	25.0	2.0	0.26	ug/l	25.0	ND	100	70-125	5	20	
Trichlorofluoromethane	30.8	5.0	0.34	ug/l	25.0	ND	123	55-145	6	25	
1,2,3-Trichloropropane	31.2	10	0.85	ug/l	25.0	ND	125	55-140	4	30	
1,2,4-Trimethylbenzene	28.1	2.0	0.23	ug/l	25.0	ND	112	60-125	5	25	
1,3,5-Trimethylbenzene	28.8	2.0	0.26	ug/l	25.0	ND	115	70-130	4	20	
Vinyl chloride	25.9	5.0	0.26	ug/l	25.0	ND	104	40-135	6	30	
o-Xylene	26.6	2.0	0.24	ug/l	25.0	ND	106	65-125	4	20	
m,p-Xylenes	54.3	2.0	0.52	ug/l	50.0	ND	109	65-130	6	25	
Xylenes, Total	81.0	4.0	0.52	ug/l	75.0	ND	108	65-135	5	20	
Di-isopropyl Ether (DIPE)	29.7	5.0	0.25	ug/l	25.0	ND	119	65-140	5	25	
Ethyl tert-Butyl Ether (ETBE)	28.7	5.0	0.28	ug/l	25.0	ND	115	60-140	3	25	
tert-Amyl Methyl Ether (TAME)	31.6	5.0	0.33	ug/l	25.0	ND	126	55-145	3	30	
Methyl-tert-butyl Ether (MTBE)	32.0	5.0	0.32	ug/l	25.0	ND	128	50-155	1	25	
tert-Butanol (TBA)	123	50	3.1	ug/l	125	ND	98	65-145	8	25	
Ethanol	245	150	100	ug/l	250	ND	98	35-165	6	30	
Surrogate: Dibromofluoromethane	26.3			ug/l	25.0		105	80-120			
Surrogate: Toluene-d8	26.4			ug/l	25.0		106	80-120			
Surrogate: 4-Bromofluorobenzene	24.0			ug/l	25.0		96	80-120			
O											

#### Del Mar Analytical, Irvine



SECOR International, Inc.-Thousand Oaks

290 Conejo Ridge Avenue, Suite 200

Thousand Oaks, CA 91361 Attention: John Bollier Project ID: ARCO 0031, South Gate

Sampled: 11/16/04-11/17/04

Received: 11/17/04

#### DATA QUALIFIERS AND DEFINITIONS

**J,DX** EPA Flag - Estimated value, Value < lowest standard (MQL), but > than MDL

LN,AY The MS and/or MSD were below the acceptance limits due to sample matrix interference. See Blank Spike (LCS).

Report Number: INK1303

ND Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.

**RPD** Relative Percent Difference

#### ADDITIONAL COMMENTS

#### For 8260 analyses:

Due to the high water solubility of alcohols and ketones, the calibration criteria for these compounds is <30% RSD. The average % RSD of all compounds in the calibration is 15%, in accordance with EPA methods.

#### For GRO (C4-C12):

GRO (C4-C12) is quantitated against a gasoline standard. Quantitation begins immediately following the methanol peak.

#### **8015 Analysis EDF Parlabel Cross Reference**

 Analyte
 EDF

 GRO (C4 - C12)
 GROC4C12

Del Mar Analytical, Irvine



SECOR International, Inc.-Thousand Oaks

290 Conejo Ridge Avenue, Suite 200

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Project ID: ARCO 0031, South Gate

Sampled: 11/16/04-11/17/04

Thousand Oaks, CA 91361 Report Number: INK1303 Attention: John Bollier

Received: 11/17/04

#### **Certification Summary**

#### Del Mar Analytical, Irvine

Method	Matrix	NELAP	CA
EPA 8015B	Water	X	X
EPA 8260B	Water	X	X

NV and NELAP provide analyte specific accreditations. Analyte specific information for Del Mar Analytical may be obtained by contacting the laboratory or visiting our website at www.dmalabs.com.

**Del Mar Analytical, Irvine** Wendy Kirkeeng

Project Manager

Page	1	of	1
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Custody Seals In Place Yes No

### **Chain of Custody Record**

**Project Name:** 2004-Q4 Groundwater

BP BU/AR Region/Enfos Segment: Terminal

State or Lead Regulatory Agency: Atlantic Richfield

Requested Due Date (mm/dd/yy): Standard TAT

On-site Time:	Temp:
Off-site Time:	Temp:
Sky Conditions:	
Meteorological Events:	
Wind Speed:	Direction:

Lab I	Name:	Del Ma	r Analytical				BP/AR Facility No	:		860	)1 G	arfiel	d Blv	d., S	outh	ı Ga	te, C	A	Cons	sulta	nt/C	ontr	acto	r: SE	COR Interna	tional,	Inc.	
Addr	ess:	2852 A	ton Ave.				BP/AR Facility Ad	dres	ss:	003	31								Addr	ess:	290	) Co	nejo	Ridg	e Ave. #200			
		Irvine, (	CA 92606				Site Lat/Long:			33.	95 /	-118.	.17						Thou	ısan	d O	aks,	CA.	9136	31			
Lab F	PM:	Chris R	oberts				California Global I	DΝ	0.:	TO	6037	0504	-8						Cons	sulta	nt/C	ontr	acto	r Pro	ject No.: 37B	P.0003	31.08	
Tele/	Fax:	949-26	1-1022 / 94	9-26	31-12	228	Enfos Project No.	:	G09	9K0-	-033	5			.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,				Cons	sulta	nt/C	ontr	acto	r PM	: John Bolier			
BP/A	R PM Contact:	Darrell	Fah		**********		Provision												Tele	/Fax	: (80	)5) 2	30-1	266	/ (805) 230-1	277		
Addr	ess:	4 Centr	e Point Dr.				Phase/WBS:		5 11	ITE	RIM	RESI	PONS	SE					Repo	ort T	уре	& Q	C Le	vel:				
		La Pain	na, CA				Sub Phase/Task:		AN	ALY	TICA	\L							E-ma	ail El	DD.	To: t	auc	hard	@secor.com			
Tele/	Fax:	(714) 3	78-5105				Cost Element:		SU	BCC	NTF	RACT	COS	ST					Invoi	ce to	o: C	ons	ultar	ıt				
Lab	Bottle Order No:				Mat	rix				P	rese	rvati	ve				Re	que	stec	Ana	alys	is						
Item No.	Sample Description	Time	Date	Soil/Solid	Water/Liquid	Air	Laboratory No.	No. of Containers	Unpreserved	H <sub>2</sub> SO <sub>4</sub>	HNO <sub>3</sub>	HCI	Methanol		GRO (8015) C4-C12	BTEX/OXY/ET (8260)	VOCs/Ketones (8260)								Sample	Point i		g and
1	MW-19	0120	11/10/04	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	х			6			I	X			Х	Х	Х								Sumple 1	Date	11/17/0	1
2	MW-20	1850	11/16/04		х			6				X			х	Х	Х											
3	FB-5110-20041116	1830		1	x			6		T	T	x	$\Box$	-	Х	Х	x		7	$\dashv$					QCFB			
4	TB-5110-20041116		11/16/04		x			4		T	T	x			х	Х	x		1	1					QCTB	<del></del>		
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Spe	cial Instructions:																						~~~					

Cooler Temperature on Receipt Soft

Temp Blank Yes

Trip Blank Yes

Project: ARCO 5110, Southgate



#### LABORATORY REPORT

Prepared For: SECOR International, Inc.-Thousand Oaks

290 Conejo Ridge Avenue, Suite 200

Thousand Oaks, CA 91361 Attention: Gareth Roberts

Sampled: 11/16/04 Received: 11/17/04

Issued: 12/02/04 12:28

#### NELAP #01108CA CA ELAP #1197 CSDLAC #10117

The results listed within this Laboratory Report pertain only to the samples tested in the laboratory. The analyses contained in this report were performed in accordance with the applicable certifications as noted. All soil samples are reported on a wet weight basis unless otherwise noted in the report. This Laboratory Report is confidential and is intended for the sole use of Del Mar Analytical and its client. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical. The Chain of Custody, 1 page, is included and is an integral part of this report.

This entire report was reviewed and approved for release.

#### **CASE NARRATIVE**

SAMPLE RECEIPT: Samples were received intact, at 5°C, on ice and with chain of custody documentation.

HOLDING TIMES: All samples were analyzed within prescribed holding times and/or in accordance with the Del Mar

Analytical Sample Acceptance Policy unless otherwise noted in the report.

PRESERVATION: Samples requiring preservation were verified prior to sample analysis.

QA/QC CRITERIA: All analyses met method criteria, except as noted in the report with data qualifiers.

COMMENTS: No significant observations were made.

SUBCONTRACTED: No analyses were subcontracted to an outside laboratory.

LABORATORY ID	CLIENT ID	MATRIX
INK1253-01	MW-A1	Water
INK1253-02	MW-A2	Water
INK1253-03	MW-A3	Water
INK1253-04	MW-A4	Water
INK1253-05	MW-A5	Water
INK1253-06	MW-A6	Water
INK1253-07	MW-A7	Water
INK1253-08	DUP-5110-20041116	Water

Reviewed By:

Del Mar Analytical, Irvine

dy Sofikery

SECOR International, Inc.-Thousand Oaks

290 Conejo Ridge Avenue, Suite 200

Thousand Oaks, CA 91361 Attention: Gareth Roberts Project ID: ARCO 5110, Southgate

Sampled: 11/16/04

Report Number: INK1253 Received: 11/17/04

#### **VOLATILE FUEL HYDROCARBONS (EPA 5030/8015M)**

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: INK1253-01 (MW-A1 - Water) Reporting Units: ug/l GRO (C4 - C12) Surrogate: 4-BFB (FID) (60-135%)	EPA 8015B	4K24004	50	ND 103 %	1	11/24/2004	11/24/2004	
Sample ID: INK1253-02 (MW-A2 - Water) Reporting Units: ug/l GRO (C4 - C12) Surrogate: 4-BFB (FID) (60-135%)	EPA 8015B	4K24004	1000	<b>2200</b> 93 %	20	11/24/2004	11/24/2004	
Sample ID: INK1253-03 (MW-A3 - Water) Reporting Units: ug/l GRO (C4 - C12) Surrogate: 4-BFB (FID) (60-135%)	EPA 8015B	4K24004	1000	<b>7000</b> 81 %	20	11/24/2004	11/24/2004	
Sample ID: INK1253-04 (MW-A4 - Water) Reporting Units: ug/l GRO (C4 - C12) Surrogate: 4-BFB (FID) (60-135%)	EPA 8015B	4K24004	5000	<b>24000</b> 92 %	100	11/24/2004	11/24/2004	
Sample ID: INK1253-05 (MW-A5 - Water) Reporting Units: ug/l GRO (C4 - C12) Surrogate: 4-BFB (FID) (60-135%)	EPA 8015B	4K24129	250	<b>2400</b> 99 %	5	11/24/2004	11/24/2004	
Sample ID: INK1253-06 (MW-A6 - Water) Reporting Units: ug/l GRO (C4 - C12) Surrogate: 4-BFB (FID) (60-135%)	EPA 8015B	4K24002	50	<b>67</b> 104 %	1	11/24/2004	11/24/2004	PV
Sample ID: INK1253-07 (MW-A7 - Water) Reporting Units: ug/l GRO (C4 - C12) Surrogate: 4-BFB (FID) (60-135%)	EPA 8015B	4K24002	500	<b>2100</b> 93 %	10	11/24/2004	11/24/2004	PV
Sample ID: INK1253-08 (DUP-5110-2004111)  Reporting Units: ug/l  GRO (C4 - C12)  Surrogate: 4-BFB (FID) (60-135%)	<b>6 - Water)</b> EPA 8015B	4K24002	1000	<b>4900</b> 85 %	20	11/24/2004	11/24/2004	PV

#### Del Mar Analytical, Irvine

SECOR International, Inc.-Thousand Oaks 290 Conejo Ridge Avenue, Suite 200

Project ID: ARCO 5110, Southgate

Sampled: 11/16/04

Thousand Oaks, CA 91361 Attention: Gareth Roberts Report Number: INK1253

Received: 11/17/04

#### BTEX/OXYGENATES by GC/MS (EPA 8260B)

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
·	1,12,110,0	Dittoli	ZHIIV	Testit	1 40101	Lauretta	1 IIIII j Zeu	Quantities 5
Sample ID: INK1253-01 (MW-A1 - Water)								
Reporting Units: ug/l	EDA 9260D	47/2/020	2.0	4.0	1	11/26/2004	11/26/2004	
Benzene Ethylbenzene	EPA 8260B EPA 8260B	4K26020 4K26020	2.0 2.0	<b>4.0</b> ND	1		11/26/2004 11/26/2004	
Toluene	EPA 8260B	4K26020	2.0	ND ND	1 1		11/26/2004	
m,p-Xylenes	EPA 8260B	4K26020	2.0	ND ND	1		11/26/2004	
o-Xylene	EPA 8260B	4K26020	2.0	ND ND	1		11/26/2004	
Xylenes, Total	EPA 8260B	4K26020	4.0	ND ND	1		11/26/2004	
· · · · · · · · · · · · · · · · · · ·					1			
Di-isopropyl Ether (DIPE)	EPA 8260B	4K26020	5.0	ND			11/26/2004	
Ethyl tert-Butyl Ether (ETBE)	EPA 8260B	4K26020	5.0	ND	1		11/26/2004	
tert-Amyl Methyl Ether (TAME)	EPA 8260B	4K26020	5.0	ND	1		11/26/2004	
Methyl-tert-butyl Ether (MTBE)	EPA 8260B	4K26020	5.0	ND	1		11/26/2004	
tert-Butanol (TBA)	EPA 8260B	4K26020	50	ND	1		11/26/2004	
Ethanol	EPA 8260B	4K26020	150	ND	1	11/26/2004	11/26/2004	
Surrogate: Dibromofluoromethane (80-120%)				102 %				
Surrogate: Toluene-d8 (80-120%)				102 %				
Surrogate: 4-Bromofluorobenzene (80-120%)				100 %				
Sample ID: INK1253-02 (MW-A2 - Water)								
Reporting Units: ug/l								
Benzene	EPA 8260B	4K26035	8.0	330	4	11/26/2004	11/27/2004	
Ethylbenzene	EPA 8260B	4K26035	8.0	61	4	11/26/2004	11/27/2004	
Toluene	EPA 8260B	4K26035	8.0	46	4	11/26/2004	11/27/2004	
m,p-Xylenes	EPA 8260B	4K26035	8.0	99	4	11/26/2004	11/27/2004	
o-Xylene	EPA 8260B	4K26035	8.0	33	4	11/26/2004	11/27/2004	
Xylenes, Total	EPA 8260B	4K26035	16	130	4	11/26/2004	11/27/2004	
Di-isopropyl Ether (DIPE)	EPA 8260B	4K26035	20	ND	4	11/26/2004	11/27/2004	
Ethyl tert-Butyl Ether (ETBE)	EPA 8260B	4K26035	20	ND	4	11/26/2004	11/27/2004	
tert-Amyl Methyl Ether (TAME)	EPA 8260B	4K26035	20	ND	4	11/26/2004	11/27/2004	
Methyl-tert-butyl Ether (MTBE)	EPA 8260B	4K26035	20	ND	4	11/26/2004	11/27/2004	
tert-Butanol (TBA)	EPA 8260B	4K26035	200	ND	4	11/26/2004	11/27/2004	
Ethanol	EPA 8260B	4K26035	600	ND	4	11/26/2004	11/27/2004	
Surrogate: Dibromofluoromethane (80-120%)				117%				
Surrogate: Toluene-d8 (80-120%)				115 %				
Surrogate: 4-Bromofluorobenzene (80-120%)				112 %				

Del Mar Analytical, Irvine

SECOR International, Inc.-Thousand Oaks

290 Conejo Ridge Avenue, Suite 200

Thousand Oaks, CA 91361 Attention: Gareth Roberts Project ID: ARCO 5110, Southgate

Sampled: 11/16/04

Report Number: INK1253 Received: 11/17/04

#### BTEX/OXYGENATES by GC/MS (EPA 8260B)

			Reporting	Sample	Dilution	Date	Date	Data
Analyte	Method	Batch	Limit	Result	Factor	Extracted	Analyzed	Qualifiers
Sample ID: INK1253-03 (MW-A3 - Water)								
Reporting Units: ug/l								
Benzene	EPA 8260B	4K26020	80	2900	40	11/26/2004	11/26/2004	
Ethylbenzene	EPA 8260B	4K26020	80	ND	40	11/26/2004	11/26/2004	
Toluene	EPA 8260B	4K26020	80	ND	40	11/26/2004	11/26/2004	
m,p-Xylenes	EPA 8260B	4K26020	80	ND	40	11/26/2004	11/26/2004	
o-Xylene	EPA 8260B	4K26020	80	ND	40	11/26/2004	11/26/2004	
Xylenes, Total	EPA 8260B	4K26020	160	ND	40	11/26/2004	11/26/2004	
Di-isopropyl Ether (DIPE)	EPA 8260B	4K26020	200	ND	40	11/26/2004	11/26/2004	
Ethyl tert-Butyl Ether (ETBE)	EPA 8260B	4K26020	200	ND	40	11/26/2004	11/26/2004	
tert-Amyl Methyl Ether (TAME)	EPA 8260B	4K26020	200	ND	40	11/26/2004	11/26/2004	
Methyl-tert-butyl Ether (MTBE)	EPA 8260B	4K26020	200	570	40	11/26/2004	11/26/2004	
tert-Butanol (TBA)	EPA 8260B	4K26020	2000	ND	40	11/26/2004	11/26/2004	
Ethanol	EPA 8260B	4K26020	6000	ND	40	11/26/2004	11/26/2004	
Surrogate: Dibromofluoromethane (80-120%)				103 %				
Surrogate: Toluene-d8 (80-120%)				103 %				
Surrogate: 4-Bromofluorobenzene (80-120%)				99 %				
Sample ID: INK1253-04 (MW-A4 - Water)								
Reporting Units: ug/l								
Benzene	EPA 8260B	4K26020	200	7400	100		11/26/2004	
Ethylbenzene	EPA 8260B	4K26020	200	1100	100	11/26/2004	11/26/2004	
Toluene	EPA 8260B	4K26020	200	980	100	11/26/2004	11/26/2004	
m,p-Xylenes	EPA 8260B	4K26020	200	2400	100	11/26/2004	11/26/2004	
o-Xylene	EPA 8260B	4K26020	200	300	100	11/26/2004	11/26/2004	
Xylenes, Total	EPA 8260B	4K26020	400	2700	100	11/26/2004	11/26/2004	
Di-isopropyl Ether (DIPE)	EPA 8260B	4K26020	500	ND	100	11/26/2004	11/26/2004	
Ethyl tert-Butyl Ether (ETBE)	EPA 8260B	4K26020	500	ND	100	11/26/2004	11/26/2004	
tert-Amyl Methyl Ether (TAME)	EPA 8260B	4K26020	500	ND	100	11/26/2004	11/26/2004	
Methyl-tert-butyl Ether (MTBE)	EPA 8260B	4K26020	500	ND	100	11/26/2004	11/26/2004	
tert-Butanol (TBA)	EPA 8260B	4K26020	5000	ND	100	11/26/2004	11/26/2004	
Ethanol	EPA 8260B	4K26020	15000	ND	100	11/26/2004	11/26/2004	
Surrogate: Dibromofluoromethane (80-120%)				104 %				
Surrogate: Toluene-d8 (80-120%)				103 %				
Surrogate: 4-Bromofluorobenzene (80-120%)				100 %				

SECOR International, Inc.-Thousand Oaks

290 Conejo Ridge Avenue, Suite 200

Thousand Oaks, CA 91361 Attention: Gareth Roberts Project ID: ARCO 5110, Southgate

Sampled: 11/16/04

Report Number: INK1253 Received: 11/17/04

#### BTEX/OXYGENATES by GC/MS (EPA 8260B)

			Reporting	Sample	Dilution	Date	Date	Data
Analyte	Method	Batch	Limit	Result	Factor	Extracted	Analyzed	Qualifiers
Sample ID: INK1253-05 (MW-A5 - Water)								
Reporting Units: ug/l								
Benzene	EPA 8260B	4K26020	8.0	180	4	11/26/2004	11/26/2004	
Ethylbenzene	EPA 8260B	4K26020	8.0	93	4	11/26/2004	11/26/2004	
Toluene	EPA 8260B	4K26020	8.0	ND	4	11/26/2004	11/26/2004	
m,p-Xylenes	EPA 8260B	4K26020	8.0	430	4	11/26/2004	11/26/2004	
o-Xylene	EPA 8260B	4K26020	8.0	240	4	11/26/2004	11/26/2004	
Xylenes, Total	EPA 8260B	4K26020	16	660	4	11/26/2004	11/26/2004	
Di-isopropyl Ether (DIPE)	EPA 8260B	4K26020	20	ND	4	11/26/2004	11/26/2004	
Ethyl tert-Butyl Ether (ETBE)	EPA 8260B	4K26020	20	ND	4	11/26/2004	11/26/2004	
tert-Amyl Methyl Ether (TAME)	EPA 8260B	4K26020	20	ND	4	11/26/2004	11/26/2004	
Methyl-tert-butyl Ether (MTBE)	EPA 8260B	4K26020	20	370	4	11/26/2004	11/26/2004	
tert-Butanol (TBA)	EPA 8260B	4K26020	200	790	4	11/26/2004	11/26/2004	
Ethanol	EPA 8260B	4K26020	600	ND	4	11/26/2004	11/26/2004	
Surrogate: Dibromofluoromethane (80-120%)				106 %				
Surrogate: Toluene-d8 (80-120%)				102 %				
Surrogate: 4-Bromofluorobenzene (80-120%)				100 %				
Sample ID: INK1253-06 (MW-A6 - Water)								
Reporting Units: ug/l								
Benzene	EPA 8260B	4K26020	2.0	21	1	11/26/2004	11/26/2004	
Ethylbenzene	EPA 8260B	4K26020	2.0	ND	1	11/26/2004	11/26/2004	
Toluene	EPA 8260B	4K26020	2.0	ND	1	11/26/2004	11/26/2004	
m,p-Xylenes	EPA 8260B	4K26020	2.0	ND	1	11/26/2004	11/26/2004	
o-Xylene	EPA 8260B	4K26020	2.0	ND	1	11/26/2004	11/26/2004	
Xylenes, Total	EPA 8260B	4K26020	4.0	ND	1	11/26/2004	11/26/2004	
Di-isopropyl Ether (DIPE)	EPA 8260B	4K26020	5.0	ND	1	11/26/2004	11/26/2004	
Ethyl tert-Butyl Ether (ETBE)	EPA 8260B	4K26020	5.0	ND	1	11/26/2004	11/26/2004	
tert-Amyl Methyl Ether (TAME)	EPA 8260B	4K26020	5.0	ND	1	11/26/2004	11/26/2004	
Methyl-tert-butyl Ether (MTBE)	EPA 8260B	4K26020	5.0	ND	1	11/26/2004	11/26/2004	
tert-Butanol (TBA)	EPA 8260B	4K26020	50	ND	1	11/26/2004	11/26/2004	
Ethanol	EPA 8260B	4K26020	150	ND	1	11/26/2004	11/26/2004	
Surrogate: Dibromofluoromethane (80-120%)				106 %				
Surrogate: Toluene-d8 (80-120%)				102 %				
Surrogate: 4-Bromofluorobenzene (80-120%)				98 %				

Del Mar Analytical, Irvine

SECOR International, Inc.-Thousand Oaks

Project ID: ARCO 5110, Southgate

Report Number: INK1253

290 Conejo Ridge Avenue, Suite 200 Thousand Oaks, CA 91361 Sampled: 11/16/04 Received: 11/17/04

Attention: Gareth Roberts

BTEX/OXYGENATES by GC/MS (EPA 8260B)

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: INK1253-07 (MW-A7 - Water)							·	
Reporting Units: ug/l								
Benzene	EPA 8260B	4K26020	40	980	20	11/26/2004	11/26/2004	
Ethylbenzene	EPA 8260B	4K26020	40	ND	20	11/26/2004	11/26/2004	
Toluene	EPA 8260B	4K26020	40	ND	20	11/26/2004	11/26/2004	
m,p-Xylenes	EPA 8260B	4K26020	40	ND	20	11/26/2004	11/26/2004	
o-Xylene	EPA 8260B	4K26020	40	ND	20	11/26/2004	11/26/2004	
Xylenes, Total	EPA 8260B	4K26020	80	ND	20	11/26/2004	11/26/2004	
Di-isopropyl Ether (DIPE)	EPA 8260B	4K26020	100	ND	20	11/26/2004	11/26/2004	
Ethyl tert-Butyl Ether (ETBE)	EPA 8260B	4K26020	100	ND	20	11/26/2004	11/26/2004	
tert-Amyl Methyl Ether (TAME)	EPA 8260B	4K26020	100	ND	20	11/26/2004	11/26/2004	
Methyl-tert-butyl Ether (MTBE)	EPA 8260B	4K26020	100	210	20	11/26/2004	11/26/2004	
tert-Butanol (TBA)	EPA 8260B	4K26020	1000	ND	20	11/26/2004	11/26/2004	
Ethanol	EPA 8260B	4K26020	3000	ND	20	11/26/2004	11/26/2004	
Surrogate: Dibromofluoromethane (80-120%)				108 %				
Surrogate: Toluene-d8 (80-120%)				103 %				
Surrogate: 4-Bromofluorobenzene (80-120%)				101 %				
Sample ID: INK1253-08 (DUP-5110-20041110	6 - Water)							PC
Reporting Units: ug/l								
Benzene	EPA 8260B	4K29027	40	2300	20	11/29/2004	11/30/2004	
Ethylbenzene	EPA 8260B	4K29027	40	ND	20	11/29/2004	11/30/2004	
Toluene	EPA 8260B	4K29027	40	ND	20	11/29/2004	11/30/2004	
m,p-Xylenes	EPA 8260B	4K29027	40	ND	20	11/29/2004	11/30/2004	
o-Xylene	EPA 8260B	4K29027	40	ND	20	11/29/2004	11/30/2004	
Xylenes, Total	EPA 8260B	4K29027	80	ND	20	11/29/2004	11/30/2004	
Di-isopropyl Ether (DIPE)	EPA 8260B	4K29027	100	ND	20	11/29/2004	11/30/2004	
Ethyl tert-Butyl Ether (ETBE)	EPA 8260B	4K29027	100	ND	20	11/29/2004	11/30/2004	
tert-Amyl Methyl Ether (TAME)	EPA 8260B	4K29027	100	ND	20	11/29/2004	11/30/2004	
Methyl-tert-butyl Ether (MTBE)	EPA 8260B	4K29027	100	520	20	11/29/2004	11/30/2004	
tert-Butanol (TBA)	EPA 8260B	4K29027	1000	ND	20	11/29/2004	11/30/2004	
Ethanol	EPA 8260B	4K29027	3000	ND	20	11/29/2004	11/30/2004	
Surrogate: Dibromofluoromethane (80-120%)				110 %				
Surrogate: Toluene-d8 (80-120%)				106%				
Surrogate: 4-Bromofluorobenzene (80-120%)				103 %				

Del Mar Analytical, Irvine

SECOR International, Inc.-Thousand Oaks

Project ID: ARCO 5110, Southgate

290 Conejo Ridge Avenue, Suite 200 Thousand Oaks, CA 91361 Sampled: 11/16/04 Received: 11/17/04

Attention: Gareth Roberts

Report Number: INK1253

#### METHOD BLANK/QC DATA

#### **VOLATILE FUEL HYDROCARBONS (EPA 5030/8015M)**

		Reporting		Spike	Source		%REC		RPD	Data
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifiers
Batch: 4K24002 Extracted: 11/24/04										
Blank Analyzed: 11/24/04 (4K24002-BL	K1)									
GRO (C4 - C12)	ND	50	ug/l							
Surrogate: 4-BFB (FID)	9.33		ug/l	10.0		93	60-135			
LCS Analyzed: 11/24/04 (4K24002-BS1)	)									
GRO (C4 - C12)	202	50	ug/l	220		92	70-135			
Surrogate: 4-BFB (FID)	10.9		ug/l	10.0		109	60-135			
Matrix Spike Analyzed: 11/24/04 (4K24	002-MS1)				Source: I	NK1253-0	16			
GRO (C4 - C12)	252	50	ug/l	220	67	84	60-135			
Surrogate: 4-BFB (FID)	13.5		ug/l	10.0		135	60-135			
Matrix Spike Dup Analyzed: 11/24/04 (4	4K24002-MS	<b>D</b> 1)			Source: I	NK1253-0	16			
GRO (C4 - C12)	199	50	ug/l	220	67	60	60-135	24	20	RA
Surrogate: 4-BFB (FID)	10.5		ug/l	10.0		105	60-135			
Batch: 4K24004 Extracted: 11/24/04										
Blank Analyzed: 11/24/04 (4K24004-BL	K1)									
GRO (C4 - C12)	ND	50	ug/l							
Surrogate: 4-BFB (FID)	9.94		ug/l	10.0		99	60-135			
LCS Analyzed: 11/24/04 (4K24004-BS1)	)									
GRO (C4 - C12)	240	50	ug/l	220		109	70-135			
Surrogate: 4-BFB (FID)	10.9		ug/l	10.0		109	60-135			
Matrix Spike Analyzed: 11/24/04 (4K24	004-MS1)				Source: I	NK1185-0	1			
GRO (C4 - C12)	263	50	ug/l	220	23	109	60-135			
Surrogate: 4-BFB (FID)	10.5		ug/l	10.0		105	60-135			

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SECOR International, Inc.-Thousand Oaks

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290 Conejo Ridge Avenue, Suite 200 Thousand Oaks, CA 91361 Sampled: 11/16/04 Received: 11/17/04

Attention: Gareth Roberts

#### METHOD BLANK/QC DATA

#### **VOLATILE FUEL HYDROCARBONS (EPA 5030/8015M)**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 4K24004 Extracted: 11/24/04										
Matrix Spike Dup Analyzed: 11/24/04	(4K24004-MS	SD1)			Source: I	NK1185-0	1			
GRO (C4 - C12)	275	50	ug/l	220	23	115	60-135	4	20	
Surrogate: 4-BFB (FID)	10.8		ug/l	10.0		108	60-135			
Batch: 4K24129 Extracted: 11/24/04										
Blank Analyzed: 11/24/04 (4K24129-B	LK1)									
GRO (C4 - C12)	ND	50	ug/l							
Surrogate: 4-BFB (FID)	9.53		ug/l	10.0		95	60-135			
LCS Analyzed: 11/24/04 (4K24129-BS	1)									
GRO (C4 - C12)	240	50	ug/l	220		109	70-135			
Surrogate: 4-BFB (FID)	9.95		ug/l	10.0		100	60-135			
Matrix Spike Analyzed: 11/24/04 (4K2	4129-MS1)				Source: I	NK1211-0	1			
GRO (C4 - C12)	239	50	ug/l	220	ND	109	60-135			
Surrogate: 4-BFB (FID)	9.85		ug/l	10.0		98	60-135			
Matrix Spike Dup Analyzed: 11/24/04	(4K24129-MS	SD1)			Source: I	NK1211-0	1			
GRO (C4 - C12)	231	50	ug/l	220	ND	105	60-135	3	20	
Surrogate: 4-BFB (FID)	9.81		ug/l	10.0		98	60-135			

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SECOR International, Inc.-Thousand Oaks

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Report Number: INK1253

290 Conejo Ridge Avenue, Suite 200 Thousand Oaks, CA 91361 Sampled: 11/16/04 Received: 11/17/04

Attention: Gareth Roberts

## METHOD BLANK/QC DATA

#### BTEX/OXYGENATES by GC/MS (EPA 8260B)

		Reporting		Spike	Source		%REC		RPD	Data
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifiers
Batch: 4K26020 Extracted: 11/26/04										
Blank Analyzed: 11/26/04 (4K26020-B	LK1)									
Benzene	ND	2.0	ug/l							
Ethylbenzene	ND	2.0	ug/l							
Toluene	ND	2.0	ug/l							
m,p-Xylenes	ND	2.0	ug/l							
o-Xylene	ND	2.0	ug/l							
Xylenes, Total	ND	4.0	ug/l							
Di-isopropyl Ether (DIPE)	ND	5.0	ug/l							
Ethyl tert-Butyl Ether (ETBE)	ND	5.0	ug/l							
tert-Amyl Methyl Ether (TAME)	ND	5.0	ug/l							
Methyl-tert-butyl Ether (MTBE)	ND	5.0	ug/l							
tert-Butanol (TBA)	ND	50	ug/l							
Ethanol	ND	150	ug/l							
Surrogate: Dibromofluoromethane	24.5		ug/l	25.0		98	80-120			
Surrogate: Toluene-d8	25.2		ug/l	25.0		101	80-120			
Surrogate: 4-Bromofluorobenzene	24.3		ug/l	25.0		97	80-120			
LCS Analyzed: 11/26/04 (4K26020-BS	1)									
Benzene	25.0	2.0	ug/l	25.0		100	70-120			
Ethylbenzene	25.7	2.0	ug/l	25.0		103	80-120			
Toluene	25.6	2.0	ug/l	25.0		102	75-120			
m,p-Xylenes	52.6	2.0	ug/l	50.0		105	75-120			
o-Xylene	25.0	2.0	ug/l	25.0		100	75-125			
Xylenes, Total	77.7	4.0	ug/l	75.0		104	75-125			
Di-isopropyl Ether (DIPE)	24.8	5.0	ug/l	25.0		99	65-135			
Ethyl tert-Butyl Ether (ETBE)	23.8	5.0	ug/l	25.0		95	60-140			
tert-Amyl Methyl Ether (TAME)	24.6	5.0	ug/l	25.0		98	60-140			
Methyl-tert-butyl Ether (MTBE)	24.2	5.0	ug/l	25.0		97	55-145			
tert-Butanol (TBA)	123	50	ug/l	125		98	70-140			
Ethanol	238	150	ug/l	250		95	35-165			
Surrogate: Dibromofluoromethane	24.7		ug/l	25.0		99	80-120			
Surrogate: Toluene-d8	25.6		ug/l	25.0		102	80-120			
Surrogate: 4-Bromofluorobenzene	24.6		ug/l	25.0		98	80-120			

#### Del Mar Analytical, Irvine

SECOR International, Inc.-Thousand Oaks

Project ID: ARCO 5110, Southgate

290 Conejo Ridge Avenue, Suite 200 Thousand Oaks, CA 91361 Sampled: 11/16/04 Received: 11/17/04

Attention: Gareth Roberts

Report Number: INK1253 Received:

#### METHOD BLANK/QC DATA

#### BTEX/OXYGENATES by GC/MS (EPA 8260B)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC	RPD	RPD Limit	Data Qualifiers
•	resure	2311111	Cinto	Lever	Itesuit	, viel C	Limits	III D	233333	Quantities
Batch: 4K26020 Extracted: 11/26/04										
Matrix Spike Analyzed: 11/26/04 (4K26	020-MS1)				Source: I	NK1253-0	1			
Benzene	29.2	2.0	ug/l	25.0	4.0	101	70-120			
Ethylbenzene	25.9	2.0	ug/l	25.0	0.89	100	70-130			
Toluene	27.1	2.0	ug/l	25.0	1.0	104	70-120			
m,p-Xylenes	52.7	2.0	ug/l	50.0	1.9	102	65-130			
o-Xylene	25.1	2.0	ug/l	25.0	0.32	99	65-125			
Xylenes, Total	77.8	4.0	ug/l	75.0	2.3	101	65-135			
Di-isopropyl Ether (DIPE)	27.5	5.0	ug/l	25.0	0.33	109	65-140			
Ethyl tert-Butyl Ether (ETBE)	26.5	5.0	ug/l	25.0	ND	106	60-140			
tert-Amyl Methyl Ether (TAME)	26.9	5.0	ug/l	25.0	ND	108	55-145			
Methyl-tert-butyl Ether (MTBE)	27.7	5.0	ug/l	25.0	1.1	106	50-155			
tert-Butanol (TBA)	125	50	ug/l	125	ND	100	65-145			
Ethanol	226	150	ug/l	250	ND	90	35-165			
Surrogate: Dibromofluoromethane	26.1		ug/l	25.0		104	80-120			
Surrogate: Toluene-d8	25.9		ug/l	25.0		104	80-120			
Surrogate: 4-Bromofluorobenzene	25.1		ug/l	25.0		100	80-120			
Matrix Spike Dup Analyzed: 11/26/04 (4	1K26020-MS	<b>D</b> 1)			Source: Il	NK1253-0	1			
Benzene	29.3	2.0	ug/l	25.0	4.0	101	70-120	0	20	
Ethylbenzene	25.9	2.0	ug/l	25.0	0.89	100	70-130	0	20	
Toluene	27.2	2.0	ug/l	25.0	1.0	105	70-120	0	20	
m,p-Xylenes	52.4	2.0	ug/l	50.0	1.9	101	65-130	1	25	
o-Xylene	25.0	2.0	ug/l	25.0	0.32	99	65-125	0	20	
Xylenes, Total	77.5	4.0	ug/l	75.0	2.3	100	65-135	0	20	
Di-isopropyl Ether (DIPE)	27.0	5.0	ug/l	25.0	0.33	107	65-140	2	25	
Ethyl tert-Butyl Ether (ETBE)	25.8	5.0	ug/l	25.0	ND	103	60-140	3	25	
tert-Amyl Methyl Ether (TAME)	26.5	5.0	ug/l	25.0	ND	106	55-145	1	30	
Methyl-tert-butyl Ether (MTBE)	27.2	5.0	ug/l	25.0	1.1	104	50-155	2	25	
tert-Butanol (TBA)	125	50	ug/l	125	ND	100	65-145	0	25	
Ethanol	236	150	ug/l	250	ND	94	35-165	4	30	
Surrogate: Dibromofluoromethane	26.0		ug/l	25.0		104	80-120			
Surrogate: Toluene-d8	26.2		ug/l	25.0		105	80-120			
Surrogate: 4-Bromofluorobenzene	24.7		ug/l	25.0		99	80-120			

#### Del Mar Analytical, Irvine

SECOR International, Inc.-Thousand Oaks 290 Conejo Ridge Avenue, Suite 200

Project ID: ARCO 5110, Southgate

Sampled: 11/16/04

Thousand Oaks, CA 91361 Attention: Gareth Roberts Report Number: INK1253 Received: 11/17/04

#### METHOD BLANK/QC DATA

#### BTEX/OXYGENATES by GC/MS (EPA 8260B)

		Reporting		Spike	Source		%REC		RPD	Data
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifiers
Batch: 4K26035 Extracted: 11/26/04										
Blank Analyzed: 11/26/04 (4K26035-B	LK1)									
Benzene	ND	2.0	ug/l							
Ethylbenzene	ND	2.0	ug/l							
Toluene	ND	2.0	ug/l							
m,p-Xylenes	ND	2.0	ug/l							
o-Xylene	ND	2.0	ug/l							
Xylenes, Total	ND	4.0	ug/l							
Di-isopropyl Ether (DIPE)	ND	5.0	ug/l							
Ethyl tert-Butyl Ether (ETBE)	ND	5.0	ug/l							
tert-Amyl Methyl Ether (TAME)	ND	5.0	ug/l							
Methyl-tert-butyl Ether (MTBE)	ND	5.0	ug/l							
tert-Butanol (TBA)	ND	50	ug/l							
Ethanol	ND	150	ug/l							
Surrogate: Dibromofluoromethane	27.2		ug/l	25.0		109	80-120			
Surrogate: Toluene-d8	28.2		ug/l	25.0		113	80-120			
Surrogate: 4-Bromofluorobenzene	27.1		ug/l	25.0		108	80-120			
LCS Analyzed: 11/26/04 (4K26035-BS	1)									
Benzene	25.0	2.0	ug/l	25.0		100	70-120			
Ethylbenzene	27.1	2.0	ug/l	25.0		108	80-120			
Toluene	25.3	2.0	ug/l	25.0		101	75-120			
m,p-Xylenes	54.0	2.0	ug/l	50.0		108	75-120			
o-Xylene	25.9	2.0	ug/l	25.0		104	75-125			
Xylenes, Total	79.9	4.0	ug/l	75.0		107	75-125			
Di-isopropyl Ether (DIPE)	26.9	5.0	ug/l	25.0		108	65-135			
Ethyl tert-Butyl Ether (ETBE)	25.7	5.0	ug/l	25.0		103	60-140			
tert-Amyl Methyl Ether (TAME)	25.4	5.0	ug/l	25.0		102	60-140			
Methyl-tert-butyl Ether (MTBE)	24.8	5.0	ug/l	25.0		99	55-145			
tert-Butanol (TBA)	159	50	ug/l	125		127	70-140			
Ethanol	298	150	ug/l	250		119	35-165			
Surrogate: Dibromofluoromethane	27.3		ug/l	25.0		109	80-120			
Surrogate: Toluene-d8	29.0		ug/l	25.0		116	80-120			
Surrogate: 4-Bromofluorobenzene	28.6		ug/l	25.0		114	80-120			

#### Del Mar Analytical, Irvine

SECOR International, Inc.-Thousand Oaks 290 Conejo Ridge Avenue, Suite 200

Project ID: ARCO 5110, Southgate

Report Number: INK1253

Sampled: 11/16/04 Received: 11/17/04

Thousand Oaks, CA 91361 Attention: Gareth Roberts

#### METHOD BLANK/QC DATA

#### BTEX/OXYGENATES by GC/MS (EPA 8260B)

		Reporting		Spike	Source		%REC		RPD	Data
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifiers
Batch: 4K26035 Extracted: 11/26/04										
Matrix Spike Analyzed: 11/26/04 (4K2	6035-MS1)				Source: I	NK1380-0	1			
Benzene	22.5	2.0	ug/l	25.0	ND	90	70-120	20		
Ethylbenzene	26.0	2.0	ug/l	25.0	ND	104	70-130			
Toluene	22.9	2.0	ug/l	25.0	ND	92	70-120			
m,p-Xylenes	50.9	2.0	ug/l	50.0	ND	102	65-130			
o-Xylene	24.6	2.0	ug/l	25.0	ND	98	65-125			
Xylenes, Total	75.5	4.0	ug/l	75.0	ND	101	65-135			
Di-isopropyl Ether (DIPE)	26.1	5.0	ug/l	25.0	ND	104	65-140			
Ethyl tert-Butyl Ether (ETBE)	25.8	5.0	ug/l	25.0	ND	103	60-140			
tert-Amyl Methyl Ether (TAME)	25.6	5.0	ug/l	25.0	ND	102	55-145			
Methyl-tert-butyl Ether (MTBE)	25.0	5.0	ug/l	25.0	ND	100	50-155			
tert-Butanol (TBA)	163	50	ug/l	125	ND	130	65-145			
Ethanol	409	150	ug/l	250	ND	164	35-165			
Surrogate: Dibromofluoromethane	28.7		ug/l	25.0		115	80-120			
Surrogate: Toluene-d8	28.8		ug/l	25.0		115	80-120			
Surrogate: 4-Bromofluorobenzene	28.4		ug/l	25.0		114	80-120			
Matrix Spike Dup Analyzed: 11/26/04	(4K26035-MS)	<b>D</b> 1)			Source: Il	NK1380-0	1			
Benzene	26.5	2.0	ug/l	25.0	ND	106	70-120	16	20	
Ethylbenzene	29.0	2.0	ug/l	25.0	ND	116	70-130	11	20	
Toluene	27.0	2.0	ug/l	25.0	ND	108	70-120	16	20	
m,p-Xylenes	56.1	2.0	ug/l	50.0	ND	112	65-130	10	25	
o-Xylene	27.2	2.0	ug/l	25.0	ND	109	65-125	10	20	
Xylenes, Total	83.3	4.0	ug/l	75.0	ND	111	65-135	10	20	
Di-isopropyl Ether (DIPE)	29.2	5.0	ug/l	25.0	ND	117	65-140	11	25	
Ethyl tert-Butyl Ether (ETBE)	27.9	5.0	ug/l	25.0	ND	112	60-140	8	25	
tert-Amyl Methyl Ether (TAME)	27.2	5.0	ug/l	25.0	ND	109	55-145	6	30	
Methyl-tert-butyl Ether (MTBE)	28.1	5.0	ug/l	25.0	ND	112	50-155	12	25	
tert-Butanol (TBA)	168	50	ug/l	125	ND	134	65-145	3	25	
Ethanol	253	150	ug/l	250	ND	101	35-165	47	30	RA
Surrogate: Dibromofluoromethane	27.6		ug/l	25.0		110	80-120			
Surrogate: Toluene-d8	29.0		ug/l	25.0		116	80-120			
Surrogate: 4-Bromofluorobenzene	27.9		ug/l	25.0		112	80-120			

#### Del Mar Analytical, Irvine

SECOR International, Inc.-Thousand Oaks 290 Conejo Ridge Avenue, Suite 200

Project ID: ARCO 5110, Southgate

Sampled: 11/16/04

Thousand Oaks, CA 91361 Attention: Gareth Roberts Report Number: INK1253 Received: 11/17/04

#### METHOD BLANK/QC DATA

#### BTEX/OXYGENATES by GC/MS (EPA 8260B)

		Reporting		Spike	Source		%REC		RPD	Data
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifiers
Batch: 4K29027 Extracted: 11/29/04										
Blank Analyzed: 11/29/04 (4K29027-B	LK1)									
Benzene	ND	2.0	ug/l							
Ethylbenzene	ND	2.0	ug/l							
Toluene	ND	2.0	ug/l							
m,p-Xylenes	ND	2.0	ug/l							
o-Xylene	ND	2.0	ug/l							
Xylenes, Total	ND	4.0	ug/l							
Di-isopropyl Ether (DIPE)	ND	5.0	ug/l							
Ethyl tert-Butyl Ether (ETBE)	ND	5.0	ug/l							
tert-Amyl Methyl Ether (TAME)	ND	5.0	ug/l							
Methyl-tert-butyl Ether (MTBE)	ND	5.0	ug/l							
tert-Butanol (TBA)	ND	50	ug/l							
Ethanol	ND	150	ug/l							
Surrogate: Dibromofluoromethane	25.9		ug/l	25.0		104	80-120			
Surrogate: Toluene-d8	26.8		ug/l	25.0		107	80-120			
Surrogate: 4-Bromofluorobenzene	25.2		ug/l	25.0		101	80-120			
LCS Analyzed: 11/29/04 (4K29027-BS	1)									
Benzene	22.9	2.0	ug/l	25.0		92	70-120			
Ethylbenzene	22.6	2.0	ug/l	25.0		90	80-120			
Toluene	22.5	2.0	ug/l	25.0		90	75-120			
m,p-Xylenes	44.1	2.0	ug/l	50.0		88	75-120			
o-Xylene	21.8	2.0	ug/l	25.0		87	75-125			
Xylenes, Total	65.9	4.0	ug/l	75.0		88	75-125			
Di-isopropyl Ether (DIPE)	24.2	5.0	ug/l	25.0		97	65-135			
Ethyl tert-Butyl Ether (ETBE)	24.2	5.0	ug/l	25.0		97	60-140			
tert-Amyl Methyl Ether (TAME)	25.9	5.0	ug/l	25.0		104	60-140			
Methyl-tert-butyl Ether (MTBE)	27.0	5.0	ug/l	25.0		108	55-145			
tert-Butanol (TBA)	106	50	ug/l	125		85	70-140			
Ethanol	173	150	ug/l	250		69	35-165			
Surrogate: Dibromofluoromethane	26.2		ug/l	25.0		105	80-120			
Surrogate: Toluene-d8	27.0		ug/l	25.0		108	80-120			
Surrogate: 4-Bromofluorobenzene	25.2		ug/l	25.0		101	80-120			

#### Del Mar Analytical, Irvine

SECOR International, Inc.-Thousand Oaks

Project ID: ARCO 5110, Southgate

Report Number: INK1253

290 Conejo Ridge Avenue, Suite 200 Thousand Oaks, CA 91361

Sampled: 11/16/04 Received: 11/17/04

Attention: Gareth Roberts

## METHOD BLANK/QC DATA

### BTEX/OXYGENATES by GC/MS (EPA 8260B)

		Reporting		Spike	Source		%REC		RPD	Data
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifiers
Batch: 4K29027 Extracted: 11/29/04										
Matrix Spike Analyzed: 11/29/04 (4K29	9027-MS1)				Source: Il	NK1455-0	7			
Benzene	24.3	2.0	ug/l	25.0	ND	97	70-120			
Ethylbenzene	24.2	2.0	ug/l	25.0	ND	97	70-130			
Toluene	23.8	2.0	ug/l	25.0	ND	95	70-120			
m,p-Xylenes	46.5	2.0	ug/l	50.0	ND	93	65-130			
o-Xylene	23.0	2.0	ug/l	25.0	ND	92	65-125			
Xylenes, Total	69.4	4.0	ug/l	75.0	ND	93	65-135			
Di-isopropyl Ether (DIPE)	25.2	5.0	ug/l	25.0	ND	101	65-140			
Ethyl tert-Butyl Ether (ETBE)	24.6	5.0	ug/l	25.0	ND	98	60-140			
tert-Amyl Methyl Ether (TAME)	24.6	5.0	ug/l	25.0	ND	98	55-145			
Methyl-tert-butyl Ether (MTBE)	24.2	5.0	ug/l	25.0	ND	97	50-155			
tert-Butanol (TBA)	121	50	ug/l	125	8.4	90	65-145			
Ethanol	115	150	ug/l	250	ND	46	35-165			
Surrogate: Dibromofluoromethane	26.0		ug/l	25.0		104	80-120			
Surrogate: Toluene-d8	26.8		ug/l	25.0		107	80-120			
Surrogate: 4-Bromofluorobenzene	25.4		ug/l	25.0		102	80-120			
Matrix Spike Dup Analyzed: 11/29/04 (	4K29027-MS	<b>D</b> 1)			Source: I	NK1455-0	7			
Benzene	23.5	2.0	ug/l	25.0	ND	94	70-120	3	20	
Ethylbenzene	23.2	2.0	ug/l	25.0	ND	93	70-130	4	20	
Toluene	23.0	2.0	ug/l	25.0	ND	92	70-120	3	20	
m,p-Xylenes	45.3	2.0	ug/l	50.0	ND	91	65-130	3	25	
o-Xylene	22.4	2.0	ug/l	25.0	ND	90	65-125	3	20	
Xylenes, Total	67.7	4.0	ug/l	75.0	ND	90	65-135	2	20	
Di-isopropyl Ether (DIPE)	24.4	5.0	ug/l	25.0	ND	98	65-140	3	25	
Ethyl tert-Butyl Ether (ETBE)	23.7	5.0	ug/l	25.0	ND	95	60-140	4	25	
tert-Amyl Methyl Ether (TAME)	23.9	5.0	ug/l	25.0	ND	96	55-145	3	30	
Methyl-tert-butyl Ether (MTBE)	23.8	5.0	ug/l	25.0	ND	95	50-155	2	25	
tert-Butanol (TBA)	118	50	ug/l	125	8.4	88	65-145	3	25	
Ethanol	220	150	ug/l	250	ND	88	35-165	63	30	RA
Surrogate: Dibromofluoromethane	26.1		ug/l	25.0		104	80-120			
Surrogate: Toluene-d8	27.1		ug/l	25.0		108	80-120			
Surrogate: 4-Bromofluorobenzene	25.1		ug/l	25.0		100	80-120			

Del Mar Analytical, Irvine



SECOR International, Inc.-Thousand Oaks

290 Conejo Ridge Avenue, Suite 200

Thousand Oaks, CA 91361 Attention: Gareth Roberts Project ID: ARCO 5110, Southgate

Sampled: 11/16/04 Received: 11/17/04

Report Number: INK1253

#### DATA QUALIFIERS AND DEFINITIONS

PC Sample taken from VOA vial with air bubble > 6mm diameter
PV Hydrocarbon result partly due to individ. peak(s) in quant. range
RA RPD exceeds limit due to matrix interf.; % recovs. within limits

**ND** Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.

**RPD** Relative Percent Difference

#### ADDITIONAL COMMENTS

#### For 8260 analyses:

Due to the high water solubility of alcohols and ketones, the calibration criteria for these compounds is <30% RSD. The average % RSD of all compounds in the calibration is 15%, in accordance with EPA methods.

#### For GRO (C4-C12):

GRO (C4-C12) is quantitated against a gasoline standard. Quantitation begins immediately following the methanol peak.

#### 8015 Analysis EDF Parlabel Cross Reference

 Analyte
 EDF

 GRO (C4 - C12)
 GROC4C12

Del Mar Analytical, Irvine



SECOR International, Inc.-Thousand Oaks

290 Conejo Ridge Avenue, Suite 200

Sampled: 11/16/04 Thousand Oaks, CA 91361 Report Number: INK1253 Received: 11/17/04

Attention: Gareth Roberts

#### **Certification Summary**

Project ID: ARCO 5110, Southgate

#### Del Mar Analytical, Irvine

Method	Matrix	NELAP	CA		
EPA 8015B	Water	X	X		
EPA 8260B	Water	X	X		

NV and NELAP provide analyte specific accreditations. Analyte specific information for Del Mar Analytical may be obtained by contacting the laboratory or visiting our website at www.dmalabs.com.

Del Mar Analytical, Irvine Wendy Kirkeeng

Project Manager

Page_	1	of_	1_	



## **Chain of Custody Record**

Project Name: 2004-Q4 Groundwater
BP BU/AR Region/Enfos Segment: Terminal
State or Lead Regulatory Agency: Atlantic Richfield

Requested Due Date (mm/dd/yy): Standard TAT

	6-	
On-site Time:	Temp:	
Off-site Time:	Temp:	
Sky Conditions:		
Meteorological Events:		
Wind Speed:	Direction:	

Lab Name:	Del Ma	r Analytical				BP/AR Facility No.	:		511															OR Inte			nc.	***************************************	
Address:		Iton Ave.				BP/AR Facility Add	lress:		573	1 Fir	esto	ne B	lvd,	Sout	h Ga	ite,C	A							ge Ave.	#200				
	Irvine, (	CA 92606				Site Lat/Long:			33.9	49/-	-118.	165									aks,								
Lab PM:	Chris R	oberts				California Global II	) No	.:	T06	037	0391	5												t No.: 3			.07		
Tele/Fax:	949-26	1-1022 / 94	19-26	1-12	28	Enfos Project No.:			G09	K0-(	)105													Sareth R					li
BP/AR PM Contact:	Darrell					Provision												Tele	Fax:	(80	5) 23	0-12	266 /	(805)	230-1	277			
Address:	4 Centr	e Point Dr.				Phase/WBS:	-	3 0	&M '	WAT	ER										& QC								
7 Rud Cook	La Pair					Sub Phase/Task:		AN	ALY	TICA	AL.													@secor	.com				
Tele/Fax:		78-5105				Cost Element:			3CO			ORS	COS	T				Invoice to: Consultant											
Lab Bottle Order No:			1	Matri	х				P	rese	rvati	ve				1	Requ	ested	Ana	alysi	s								
Item Sample Description	Time	Date	Soil/Solid	Water/Liquid	Air	Laboratory No.	No. of Containers	Unpreserved	H <sub>2</sub> SO <sub>4</sub>	HNO <sub>3</sub>	HCI	Methanol		GRO (8015) C4-C12	BTEX/OXY/ET (8260)									s	ampl		Lat/Lo ments	ng an	ıd
ı MW-A1	2120	11/16/04		ΧĪ			4				X			Х	Х														
2 MW-A2	2155	11/16/04		x			4				X			Х	Х			<u> </u>											
3 MW-A3		11/16/04	11	x			4				X			Х	Х														
4 MW-A4		11/16/04	$\Pi$	X			4				X		_	X	Х			<u> </u>	ļ	_		<u> </u>		<b></b>					
5 <b>MW-A5</b>	2305	11/16/04		x			4			<u> </u>	IX.	_		X	Х				<u> </u>	<u> </u>	_		-	<b> </b>					$\overline{}$
6 MW-A6	2355	11/16/04		х		- Albania de la companya de la comp	14		_		X	_		X	X				<u> </u>	<u> </u>	-	<del> </del>	<u> </u>	<b> </b>				$\rightarrow$	$\longrightarrow$
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#### **APPENDIX E**

Waste Disposal Documentation

**O.** 24194

## NO. NON-HAZARDOUS WASTE DATA FORM

	GENERALING SHE
NAME BP West Coast Products LLC	ARCO STATION # 5110
ADDRESS P.O. Box 80249	5731 FIRESTONE BLVD.
Design Adamanta CA 92688	SOUTH GATE
( 949.). 753-5820 SITE	PROFILE NO.
CONTAINERS: No. 1 GALLONS X	78 Gallons WEIGHT
TANK DUMP DRUMS CARTONS OT	HER
NON-HAZARDOUS WATER GENERATIN	G PHOCESS GROUNDWATER SAMPLING
WASTE DESCRIPTION OF WASTE PPM %  WATER 99-100% 4	COMPONENTS OF WASTE PPM %
TPH < 1% s	
2,	BESI # 104733
PROPERTIES PHI SOUD AFT DATE	RRY OTHER
HANDLING INSTRUCTIONS: WEAR APPROPRIATE PROTECTIVE (	LOTHING
THE GENERATOR CERTIFIES THAT THE WASTE AS: DESCRIBED IS 100% arry Micothan as Agent of BP W.	est Coast Products LLC 11 / 16 /04
TYPED OR PRINTED FULL NAME & SIG	NATURE DATE  EPA I.D.
NIETO AND SONS TRUCKING, INC.	NO.
ADDRESS 1281 BREA CANYON ROAD	SERVICE ORDER NO.
CITY STATE, ZIR BREA, CALIFORNIA 92821	PICKUP DATE 11 / 16 /04
PHONE NO. (714) 990-6855	11 / 16 /04
TRUCK, UNIT, I.D. NO.	/ EPA
NAME DeMenno Kerdoon	NO. DISPOSAL METHOD
ADDRESS 2000 N. Alameda Street	LANDFILL RECYCLER
CITY STATE ZIP Compton, CA 90222	Recycler
ALCOHOL WIND	
110184 65	MCA 4 50 DATE
TYPED OR PRINTED FULL NAME & SI	GNATURE
GEN OLDÁNEW L A TONS	and the state of t
TRANS S B	
RT/CO HWDF	

### APPENDIX F

Updated Plume Travel Time Report

Ms. Harry Nguyen California Regional Water Quality Control Board Los Angeles Region 320 West 4<sup>th</sup> Street Los Angeles, California 90013-1104

Re: Updated Plume Travel Time Report ARCO Station No. 5110 5731 East Firestone Boulevard South Gate, California LARWQCB File No. I-12074

Dear Mr. Nguyen:

This report, prepared by SECOR International Incorporated (SECOR) on behalf of Atlantic Richfield Company (Atlantic Richfield), presents the following plume travel time determination for the above referenced site (the Site) (Figures 1 and 2). The estimated plume travel time is 130.5 years.

#### INTRODUCTION

This report was prepared in response to the Los Angeles Regional Water Quality Control Board (LARWQCB) letters dated February 28, 2003 and August 27, 2003, titled *Implementation of Final Draft Guidelines for the Investigation and Cleanup of MTBE and Other Oxygenates.* The LARWQCB letters included a directive to determine or estimate the time for MTBE at a concentration of 13 ug/L to reach the nearest receptor utilizing a mainstream or industry recognized fate and transport analytical model and submit a technical report documenting the modeling work and results. The directive stated that an extensive or detailed modeling effort is not required nor is that the objective. This report includes a description of the analytical model utilized, a description of the process used to arrive at the model results, justification for assumptions used, and recommendations for additional work that could reduce model uncertainties.

The nearest receptor is Municipal Well No. 02S/12W-31Q02 (SG-25), located approximately 1,800 feet southwest of the Site. Groundwater flow direction is towards the south, with the receptors being approximately down-to cross-gradient of the site.

#### MODEL DESCRIPTION

BIOSCREEN is a screening model that simulates remediation through natural attenuation (RNA) of dissolved hydrocarbons at petroleum fuel release sites. The software is programmed in the Microsoft Excel spreadsheet environment and based on the Domenico analytical solute transport model. It was developed for the Air Force Center for Environmental Excellence (AFCEE) Technology Transfer Division at Brooks Air Force Base by Groundwater Services, Inc., Houston, Texas. It has the ability to simulate advection, dispersion, adsorption, and aerobic decay as well as anaerobic reactions that have been shown to be the dominant biodegradation processes at many petroleum release sites. BIOSCREEN includes three different model types: 1) Solute transport without decay, 2) Solute transport with biodegradation modeled as a first-order decay process, and 3) Solute transport with biodegradation modeled as an instantaneous biodegradation reaction. The model is designed to simulate biodegradation by both aerobic and anaerobic reactions.

#### **MODEL LIMITATIONS**

As an analytical model, BIOSCREEN assumes simple groundwater flow conditions, including isotropic and homogeneous aquifer conditions. The model should not be applied where pumping systems create a complicated flow field. In addition, the model should not be applied if vertical flow gradients affect contaminant transport. As a screening tool, BIOSCREEN only approximates complicated processes that occur in the saturated subsurface. The model should not be applied if extremely detailed results that closely match site conditions are required. Because methyl tertiary butyl ether (MTBE) would theoretically be the first constituent to reach the receptor, the model parameters are based on MTBE and not other gasoline constituents that might be in the groundwater.

#### MODEL INPUT PARAMETERS

The BIOSCREEN analytical model requires input of the following hydrogeologic data:

- Seepage velocity, or average linear velocity as calculated from hydraulic conductivity, hydraulic gradient, and effective porosity;
- Dispersivity (based on the length of the plume);
- Retardation (input directly or calculated from soil bulk density, partition coefficient and fraction organic carbon);
- Decay rates or concentrations of electron acceptors if biodegradation is included:
- Source data (contaminant concentrations and spatial distribution in the source area);
- Modeled area length and width; and
- Simulation time.

#### Seepage Velocity

Seepage velocity, or average linear velocity, was estimated using the hydraulic gradient determined from groundwater elevation data collected at the site, hydraulic conductivity and effective porosity estimated from the saturated zone lithology. The average of the quarterly hydraulic gradients for the last four groundwater monitoring events is 0.010 feet/foot towards the south. The lithology of the saturated zone is primarily poorly graded sand, silt, sandy silt, silty sand. The hydraulic conductivity is estimated to be 0.0001 centimeters per second (cm/s) and the effective porosity is estimated to be 0.3 (Freeze and Cherry, 1979). This results in a seepage velocity of 3.4 feet per year.

#### Dispersivity

BIOSCREEN includes a simple empirical estimation of longitudinal and transverse dispersivity based on plume length and published dispersion studies. Because the objective of the modeling is to estimate the travel time to the nearest receptor, it is assumed that the plume length is equal to the distance to the nearest receptor. For this site, the nearest receptor is Municipal Well No. 02S/12W-31Q02 (SG-25), located approximately 1,800 feet southwest of the Site. This results in BISCREEN estimating a longitudinal dispersivity of 31.0 feet and a transverse dispersivity of 3.1 feet.

#### Retardation

MTBE is highly soluble and is essentially non-retarded when being transported by groundwater movement in the subsurface. Therefore, the retardation factor used in the model is 1.0.

#### Biodegradation

Solute transport with biodegradation as a first-order decay process is modeled, as well as transport without biodegradation. Literature values of first-order decay coefficients for MTBE range from 0.001899 per year to 0.01238 per year (Howard et al. 1991). A decay coefficient between the high and low values, 0.0071 per year (or a half-life of 97 years), was used in the model. The non-biodegradation case of the model was used to estimate plume travel time.

#### Source Data

The source zone thickness was set at 10 feet, as recommended in the BIOSCREEN user's manual. The source area width is estimated to be 40 feet, the width of the former underground storage tank cavity. The source area concentration is set at the maximum historical MTBE concentration in groundwater of 11 milligrams per liter (mg/L) in well D-1 on December 7, 1999. To be conservative, an infinite source mass is assumed.

#### **ASSUMPTIONS**

The following assumptions, which may not represent field conditions, are made for this plume travel time modeling estimate:

- The aguifer is of infinite horizontal extent;
- The hydraulic conductivity and effective porosity is homogeneous and isotropic;
- The groundwater linear velocity is spatially and temporally constant;
- The plume remains within the upper groundwater bearing zone;
- The nearest receptor, Municipal Well No. 02S/12W-31Q02 (SG-25), is located directly downgradient of the Site; and
- The plume travel time is the time for the primary MCL concentration of 13 ug/L to reach the receptor.

#### **CALIBRATION**

The model was calibrated based on the time between the estimated release of MTBE at the Site, and the first detection of MTBE in groundwater at groundwater monitoring well MW-A5 (at 0.0003 mg/L), located approximately 250 feet down gradient of the source area, in June 2002. MTBE was first analyzed for and detected in groundwater beneath the Site in July of 1996, so this is the earliest documented date of MTBE at the Site. With a source concentration of 11 mg/L, and a travel time of 8.85 years to reach MW-A5, the hydraulic conductivity was adjusted until a concentration of 0.0003 mg/L reached 250 feet from the source. The longitudinal dispersivity was set at 12.5 feet, based on a plume length of 250 feet. The calibration of the model resulted in a hydraulic conductivity of 0.00026 cm/s and a seepage velocity of 9.0 feet per year.

#### **RESULTS**

The plume travel time was estimated by adjusting the simulation time until the concentration at the distance to the receptor was 13 ug/L, which is the primary MCL for MTBE. Using the parameters presented above, the plume travel time to the receptor is estimated to be 130.5 years. Printouts of the model input and corresponding output are provided in Attachment A.

#### DISCUSSION

A conservative estimate of the plume travel time from the Site to the nearest receptor, Municipal Well No. 02S/12W-31Q02 (SG-25), located approximately 1,800 feet southwest of the Site and approximately down gradient of the Site, was made using BIOSCREEN, a Microsoft Excel spreadsheet analytical model based on the Domenico analytical solute transport model. The model input included estimations of hydraulic conductivity and effective porosity based on the saturated zone lithology and literature values, a hydraulic gradient based on field measured groundwater elevations, and MTBE concentrations in groundwater at the site. The travel time of only the MTBE plume was estimated, as this would be the first constituent to reach the receptor. It as assumed that biodegradation of MTBE was not occurring, but if were assumed to be occurring, the plume travel time estimate would be longer. The plume travel time estimated, 130.5 years, is the modeled time for the MTBE concentration in groundwater to reach 13 ug/L, the primary MCL of MTBE, at 1,800 feet from the Site, which is the distance to the nearest receptor.

There do not appear to be any conditions at the Site that would result in the analytical model results to be less conservative.

#### RECOMMENDATIONS

The plume travel time estimate should be revised after additional site characterization has been performed, if this work provides new information that could be used to improve the calibration.

#### **LIMITATIONS**

This report has been prepared for the exclusive use of Atlantic Richfield Company and its representatives as it pertains to ARCO Station No. 5110, located at 5731 East Firestone Boulevard, South Gate, California. The information contained in this report represents our professional opinions and is based, in part, on currently available information arrived at in accordance with currently accepted hydrogeological practices at this time and location. No other interpretations, warranties, guarantees, expressed or implied, are included or intended in the report findings.

If you have any questions regarding this *Plume Travel Time Determination Report*, please feel free to contact the undersigned at 713.379.3366.

Respectively Submitted,

**SECOR International Incorporated** 

Noel Phillip Staff Hydrogeologist Gareth Roberts, RG No. 7442 Project Manager

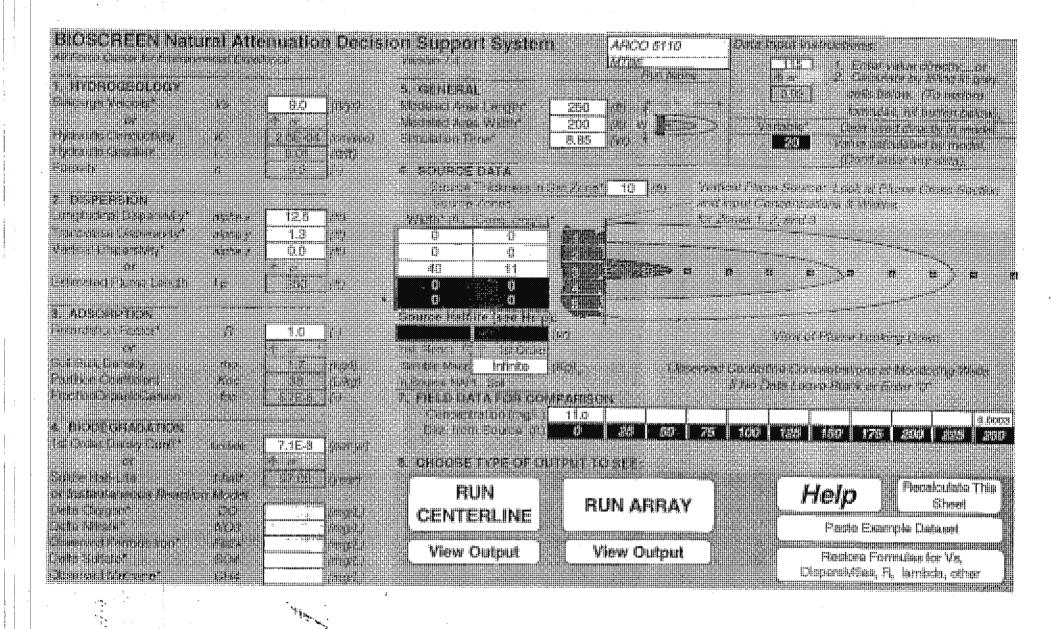
#### Attachments:

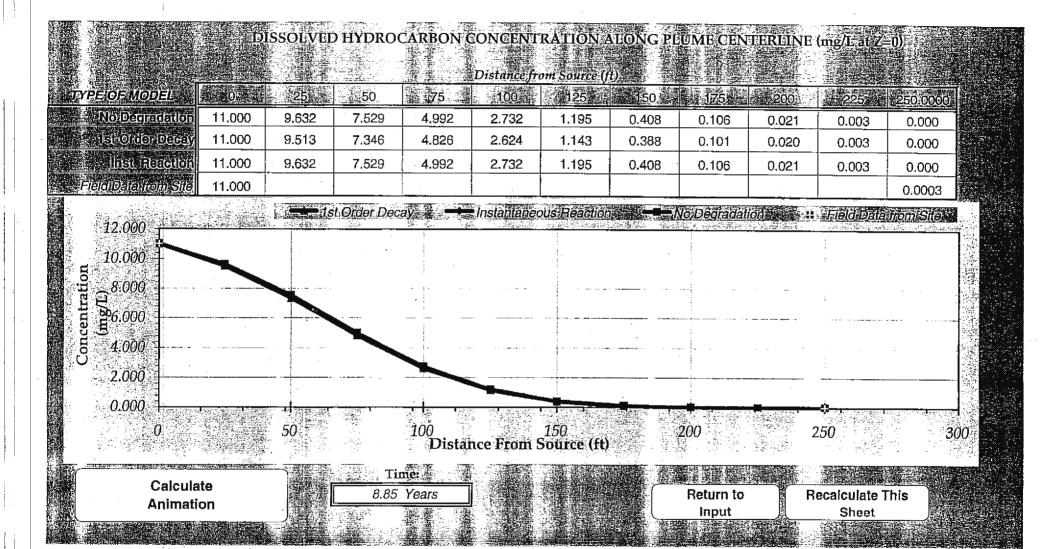
Attachment A – BIOSCREEN Input and Output - Calibration
Attachment B – BIOSCREEN Input and Output – Plume Travel Time Estimate

#### **REFERENCES**

- EPA, 1996. BIOSCREEN Natural Attenuation Decision Support System, User's Manual.
- Freeze, R.A. and J.A. Cherry, 1979. *Groundwater*. Prentice-Hall, Inc., Englewood Cliffs, New Jersey.
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# ATTACHMENT A BIOSCREEN INPUT AND OUTPUT – CALIBRATION





# APPENDIX B BIOSCREEN INPUT AND OUTPUT – PLUME TRAVEL TIME ESTIMATE

